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THE COUNTRY OF TO DAY.

THIS term doubtless is applicable to the United States as to no other country. There are countries, like South Africa and the Amazon valley, which may reach a state of development in a relatively near future, of which present conditions suggest only possibilities. There are countries—it is needless to name them here—in which exists a fixed order of things which brooks no change in a generation, if in a century. Still other countries, based upon solid foundation, financially and politically, are prevented by a matured conservatism from doing anything today radically different from what was done yesterday, and yet which keep pace with the universal progress of the human race in making this planet serve its needs and its pleasures.

The United States, however, seem to exist in a class of their own. Founded by strong, brave men from every civilized nation, the American nation has inherited the principles of conservatism without being wedded to particular forms in government or business. On the other hand, being the newest of great nations, and confronted from the beginning by unique problems, the United States and its people have not yet lost the habit of doing day by day what seems for their present good, without a too rigid regard for precedent.

These lines, penned in an office on Broadway by an American citizen, appear here in no spirit of boastfulness. They represent rather a careful attempt to portray certain characteristics which are making this the world's first industrial nation. The weakling nation of the days of General Washington, who never heard of Japan and knew Russia only as a name, has grown to a stature which entitles it to be considered in world politics, with responsibilities involved which cannot be ignored by the statesmen at Washington city. This growth has been promoted to a very great extend by the industrial American, which fact is to-day recognized in every branch of the government.

THE INDIA RUBBER WORLD regrets lack of space in which to reproduce the recent communications to the Congress by the President, which indicate his recognition that business lies at the foundation of the national structure—that, apart from their individual business, the citizens of the United States, are each and every one shareholders in one vast corporation, and their chosen officers are comparable to a board of directors charged with promoting the general prosperity.

In calling this "the country of today" we mean that it is the country of present opportunity, illustrated in no sense more fully than in the development here of the india-rubber industry. Leaving everything else aside, the growth of the rubber factories proves our contention. A few years ago a few lines in these pages chronicled the formation of a $50,000 rubber manufacturing company—a small affair indeed. Today it is capitalized at $10,000,000, on which amount it pays substantial dividends. The record in THE INDIA RUBBER WORLD of a member of the trade recently deceased was confined largely to two definite mentions. The first related to his becoming a traveling salesman for a factory capitalized at $30,000—say at a salary of $3,000 a year. The second reported his death, when his standing in the trade was such as to command a yearly salary of $85,000 for only one of the positions which he held, and his opportunities had been such as to enable him to leave a fortune expressed in millions.

The growth of the rubber industry in the United States alone guarantees the future of rubber culture in whatever part of the world it is pursued under proper conditions. It assures the continued profits of rubber production on the Amazon, which long will be a necessity, even in the face of the success of plantations of rubber elsewhere. The stability of crude rubber prices and of the prices of rubber goods in being brought about by such American corporations as one which recently was able to borrow $20,000,000 for its operations, through the sale of "notes" to the best financial institutions in New York.

The beneficial effects of such conditions will be felt ultimately by the smallest rubber factory in America, and by the large and small concerns in every other country in which rubber goods are made. What is more, doing things in the industrial line on a large scale in the United

States is now so regulated and so understood that it no longer alarms the public mind as threatening "restraint of trade"—a term which for a time suggested the evil to which the term "monopoly" used to be applied in English law.

THE START OF RUBBER PLANTING.

THE appearance on another page of this issue of the first of a series of articles on rubber culture in Mexico, by a scientific gentleman of repute, recalls the priority of that republic in the matter of planting rubber as a commercial proposition. There is little merit in the contention as to who first suggested rubber plantations. As early as 1850 London had its Caoutchouc Joint Stock Co., for operating in India, due probably to something written by Forbes, the botanist, but we believe that it never progressed beyond the formality of incorporation.

Mr. Clements R. Markham has told THE INDIA RUBBER WORLD that as early as 1870—when connected with the government of India—he reached the conclusion that the culture of rubber should be undertaken. But by that time he had introduced the *cinchona* plant from the new to the old world, and had become experienced in such matters. Collins's "Report on Caoutchouc" came out in 1872, as a government document; Wickham arrived at Kew in June, 1876, with seeds of *Hevea* from Brazil; and a few months later (as Dr. Willis told in the last INDIA RUBBER WORLD) 70 plants of this species were established successfully in Ceylon, by scientists, in publicly maintained gardens. This was the beginning of rubber planting in the Far East.

But in 1872, the late Señor Don Matias Romero, before and later Mexico's diplomatic representative at Washington—without other scientific education than falls to the lot of the Mexican gentleman, and with no knowledge that any book on rubber existed in any language—while enjoying a respite from public life, was "very much struck with the great future of the india-rubber culture, and became satisfied that it was the most lucrative branch of agriculture that could then possibly be undertaken."

With Romero to think was to act, and within a year he had chosen a location, bought land, and *planted one hundred thousand rubber* trees. A private citizen now, on his own initiative, spending his own capital—and especially with no idea that any similar undertaking was in prospect elsewhere—this progressive Mexican based his plantation upon a careful study of the inevitable decline of forest rubber supplies. The details of that study he contributed to the public through the medium of the bulletin of the Mexican agricultural society, in a paper dated December 12, 1872.

The Romero plantation, due to the recall to public life of its proprietor, and lacking his attention, was not a distinct success, but a rereading of his essay—then purely speculative—shows that if still alive he would have little to learn from the practical experience of his successors in planting rubber of the species with which he had to deal, and in the region which was his home.

It happens that the scene of Romero's activity in rubber—and he knew his Mexico well—was in the same department of Soconusco, in the state of Chiapas, to which our present contributor has devoted his interesting description. And it may be added that whatever good results may be attained by Romero's latter day successors in rubber planting will be due in no small degree to his studies and to his constant and unselfish encouragement of this new interest until the day of his death.

THE STORY OF THE FIGURES.

THE growth of the india-rubber industry, to a greater extent than almost any other, can be gauged by means of statistics which are dependable. For instance, it is plain that if more rubber is imported into the United States in one year than in another, it means a larger consumption and an increased sale of goods. A raw material costing the manufacturer $4,000 a ton or more is not likely to lie in the stock room long without being used, nor is the importer likely to store such material in warehouses much in excess of the current demand for the material. Such figures as we print, therefore, relative to the yearly importations of rubber, whether into the United States or other countries, are a guide to the growth of consumption of this material—more nearly accurate perhaps than is true of any other commodity in industrial use.

Among the many statistical details regarding rubber in the present issue of THE INDIA RUBBER WORLD not the least interesting is the fact that during December the New York customs authorities took account of more rubber than in any other month in the history of the service—*i. e.*, 10,274,128 pounds. What is notable in respect of these figures is that imports at New York are almost exclusively for consumption in the United States (and Canada), only a very small percentage of such imports finding their way across the Atlantic, and then only in exceptional circumstances. These figures do not embrace balata, gutta-percha, Pontianak, and other gums not officially recognized here as "india-rubber." Nor do they include waste rubber. This distinction is pointed out here for the reason that in some other countries everything that in any sense relates to rubber is grouped under one heading, which explains why Russia figures so largerly as a source of the rubber imported into Great Britain.

The New York customs statistics for December also shows that the import value of rubber entered during the month of all grades—Pará, African, guayule, Borneo, and the like—averaged a fraction over $1.10 per pound. This does not cover the cost of transportation, the loss from shrinkage, or the importer's profit. These figures are commended to the attention of those students of economics who are trying to figure out why the cost of living is higher than in those good old times when the

price of the best rubber at Pará was 10 pence a pound. And the tariff has nothing to do with crude rubber.

Another item of statistics of interest relates to the output of plantation rubber. The exports from Ceylon and the Malaysian ports have increased from 397,347 pounds in 1905 to 8,165,082 pounds as shown by our latest advices for 1909, which do not include the total shipments for the month of December. We may safely estimate the plantation rubber from British Asia at 8,700,000 pounds for 1909 or nearly 380 tons per month. This may be referred to as the most interesting fact in the development of modern rubber interests, particularly as it points to an even larger production when the newer plantations "come into bearing." It must be noted also that much other plantation rubber is being marketed—from Africa, the Dutch East Indies, Mexico, and so on—the statistics of which are as yet less thoroughly organized.

The appearance on the market of this new class of rubber has not tended to lower price levels, which is evidence that the demand for rubber goods is constantly on the increase. At the same time, it is to be considered that, with the exception of the Amazon region, no natural source of rubber is maintaining its output. The Congo region produced 20 per cent. less rubber last year than in the year of the largest production, and various other colonies in Africa and elsewhere can be pointed to as yielding less rubber, so that the new plantation product is not a net addition to the world's supply.

THE NAMING OF THE RUBBERS.

THAT this a world of change is nowhere better illustrated than in the india-rubber interest. When this journal was founded not even the best informed members of the trade knew, except in a casual way, where the raw material used in their factories came from. It is safe to assert that not ten rubber goods manufacturers in the world knew one botanical name in connection with rubber. The rest of the business world knew less.

To-day, when every man, woman, and child buys rubber goods, there is none who has not an opportunity to know, through newspaper advertisements and otherwise, the difference between "Pará" and other qualities of rubber, and in North America, at least, the fullest advantage is taken of this knowledge. Who, that buys or uses automobiles, for example, does not know the source of the best rubber available for tires? And in other countries what investor in advertised securities, or what reader of financial market reports, does not know the merits of *Hevea* as compared with other species of rubber yielding plants?

The introduction to the market just now of a new grade of rubber connects it with a botanical name which was applied to the tree producing it long before that tree was known to contain rubber. And this point to the suggestion that utimately all the commercial grades of rubber may be known by designations conferred by our friends the botanists.

For example, "Pará rubber" no longer comes from Pará alone, or even from the Amazon valley alone; it comes also from Colombo and Singapore and Penang and Port Swettenham. It arrives already from the Dutch East Indies and no doubt will be derived later from Mexico and the Congo. "Pará," therefore, ceases to serve as the natural or the best designation of rubber of this type. What is more reasonable or proper than the name "Hevea" rubber for the product of the genus *Hevea*, as these trees are listed by the botanists?

Similarly there may be mentioned "Castilloa" rubber, which appears in the market to an important extent, "Manihot" rubber, also to an important extent, and so on. The world is using to-day large quantities of "Landolphia," "Funtumia" and "Ficus" rubbers. It is true that a recent important rubber product of Mexico has become known commercially as "Guayule"—a local common name—but this may be taken as an exception. Why not, then, introduce a new important rubber as the "Dyera," a name based upon a botanical designation of long recognized standing?

THE GOOD THAT RUBBER SHOES DO.

THE overshoe is doing an enormous amount of good, especially among children, in protecting the body against the chilling that results in colds, sore throats, chronic catarrhs and the like.

It is not the mere getting the feet wet that is harmful, it is the prolonged evaporation of water from shoes and stockings that does the mischief. The evaporation reduces the temperature about the soles of the feet many degrees blow the temperature of the surrounding air, just as a wet bulb thermometer registers lower than a dry one.

In fact, the warmer and drier the air by which the body is surrounded the more rapid the evaporation and the lower the temperature. Also, the thicker the soles of the shoes the more water is taken up and the longer the evaporation goes on, so that thick soles do not take the place of a covering of gum which keeps the water away completely.

This evaporation and consequent continued lower temperature goes on, especially in the house, when the rest of the body is in comparative comfort and the nervous system relaxed. Wet shoes indoors are worse than wet shoes out of doors. Some people can stand this prolonged unbalancing of environment, but it takes a pretty vigorous make-up to do so.

It might be added that the wearing of overshoes that cover a large portion of the foot when one is indoors is not a good thing.—*Dietic and Hygienic Gazette.*

THE high prices of crude rubber have not been without their disadvantage to some interests in Ceylon. Dealers in tires in Colombo have received cable advices from Europe to advance the price of their goods 25 per cent. on account of the increased cost of raw material.

IT is stated by Mr. A. F. Firestone, of the Firestone Tire and Rubber Co., (Akron, Ohio), that since May 8, 1847—the date of the American patent for Thomson's "aerial wheel"—there have been issued in the United States alone 1,641 patents in the pneumatic tire field.

The New "Dyera" Rubber.

A COMPANY formed some time ago on a large scale for the production of rubber of a new grade, after extensive experimentation and the development of plant, have begun commercial operations, the first shipments of the rubber to Europe and New York having arrived at their destination during the past month. The rubber with which the new company is concerned is that which has been known to the trade for some years past as "Pontianak"—the name of the town in Borneo whence the supplies have been derived mainly—and also as "Gutta-Jelutong," which the United States government has adopted, for its classification in the customs service, from the various spellings of one of the native names in Borneo.

The consumption of this rubber has been very large, the imports into the United States alone during five years past having averaged 23,312,457 pounds. The form in which this material has reached the market has commanded a very low price, the highest quotation during the past year at New York not having exceeded 6⅞ cents per pound. The fact of its continued and growing use, however, has shown the rubber content to be of real value and of wide application in the industry, and many experiments have been made in the direction of improving the rubber before putting it to use in the factory, by deresinization, or otherwise. The new company is the result of some experiments, and the high grade of rubber attained has led to the inauguration of work on an extensive scale.

The location of the initial plant of this company is near the mouth of Sarawak river, in the British protectorate of the same name, in the western part of Borneo, and considerably north of Pontianak. The company are closing some large concessions for collecting gum from the tree known botanically as *Dyera* costulata, in the region of which their location is the center.

Under the system they have adopted it is planned to have the natives continue to tap the trees and to sell the coagulated product, as before, to the Chinese dealers, who will deliver it to the company. The object of the company in gaining the concessions is to conserve the trees, which, as tapped in the past, without intelligent supervision, have been killed over large areas. The government, under the terms of the concession referred to, has undertaken to enforce regulations for the protection of the trees.

It is the belief of the management of the new company that the quality of *Dyera* gum (or Pontianak), as known hitherto, has been largely deteriorated by the method of coagulation, and their first work was to introduce a better coagulant, of which they have a monopoly. The latex once being coagulated in the districts of its origin is transferred to their factory to be deresinated and otherwise treated, with the result that it becomes serviceable in the industry in competition with the higher grades of rubber. THE INDIA RUBBER WORLD has seen a letter from an official of one of the largest rubber manufacturing companies, reporting samples of the new rubber which he examined to be very dry and clean. He wrote: "If the rubber is of the high tensile group, its washed and dried value would be somewhere between that of Cametá and Pará."

The organization of this company so far has been in American hands. The extent of the enterprise is indicated by the fact that the company chartered a ship to carry the steel structural material for the plant and the machinery installed in it direct from New York to the property. There were in the neighborhood of 1,000 tons of machinery in this shipment. A considerable village has sprung up around their plant, in a location which until recently was jungle land.

The company is the Malaysian Rubber Co., incorporated June 18, 1909, under the laws of New Jersey, with $3,000,000 capital authorized. The president is Mr. John L. Elliot, of No. 71 Broadway, New York, which is the present head office. The board of directors includes Messrs. Cornelius Vanderbilt and Robert Goelet, also of New York. The name of the new town established by the company in Borneo is "Goebilt," derived from the names of these two directors.

It is proposed by the company to offer the new grade of

GUTTA-JELUTONG TREE.
[Botanic Gardens, Singapore.]

rubber under a name which shall distinguish it from the Pontianak or Jelutong now in the market. While such name has not yet been adopted definitely, it has been suggested that "Dyera" may prove suitable, being that of the tree yielding the rubber. For a time, and until the use of the new coagulant becomes more general, the company will offer different grades, with the idea ultimately of establishing a single standard in rubber of this class.

A NEW CURSE OF LABOR.

THE recent gift of Mr. John D. Rockefeller of $1,000,000 for the study of anchylostomiasis (the "hookworm" disease), its causes, and means for combating it in the southern United States, is likely to prove of interest over a very much larger part of the world. Under the heading "The Curse of Our Labor Force," *The Times of Ceylon*, in a leading editorial, deals with the danger which confronts the rubber planting regions of Ceylon and the Federated Malay States, through the introduction of this disease by laborers imported from India. It is pointed out that this is not only a fatal disease itself, but that before it attracts attention sufferers from it are particularly liable to fall victims to other and swifter forms of sickness, such as malaria, dysentery, and pneumonia, for which it paves the way. The medical department of Natal (South Africa) has made the use of improved sanitary regulations and appliances compulsory on estates in that colony employing Indian coolies.

"Castilloa" Rubber in Chiapas (Mexico)—I.

By J. L. Hermessen, A. M. I. E. E.

CHIAPAS is the last Mexican state on the Pacific coast before the Central American border is reached. Entering Chiapas from the southwest by the Pan American railway, which connects with the Tehuantepec National railway at Gambo (or San Geronimo), the country traversed is at first flat and uninteresting, the sameness of the vista being varied only by oasis like groups of a fan leafed palm or patches of corn and sugar cane; nearing Tonalá, it improves considerably with the frequent appearance of ranches and *llanos* stocked with fat cattle, although still dominated by the stunted arboreal forms and scrubby, ligneous undergrowth peculiar to very hot, dry climates; but some 40 or 50 kilometers beyond, towards Mapastepec, a complete change supervenes, the vegetation assuming a strictly tropical aspect, with stretches of dense jungle alternating with lofty forest, along the edges of which wild *Castilloa* rubber trees are conspicuously numerous. Thence, past Tapachula, on to the Guatemalan frontier—save for the occurrence, on the low lying coastal plains, of brackish lagoons and alligator haunted mangrove swamps—the region preserves the same general character, but with much diminished forest areas.

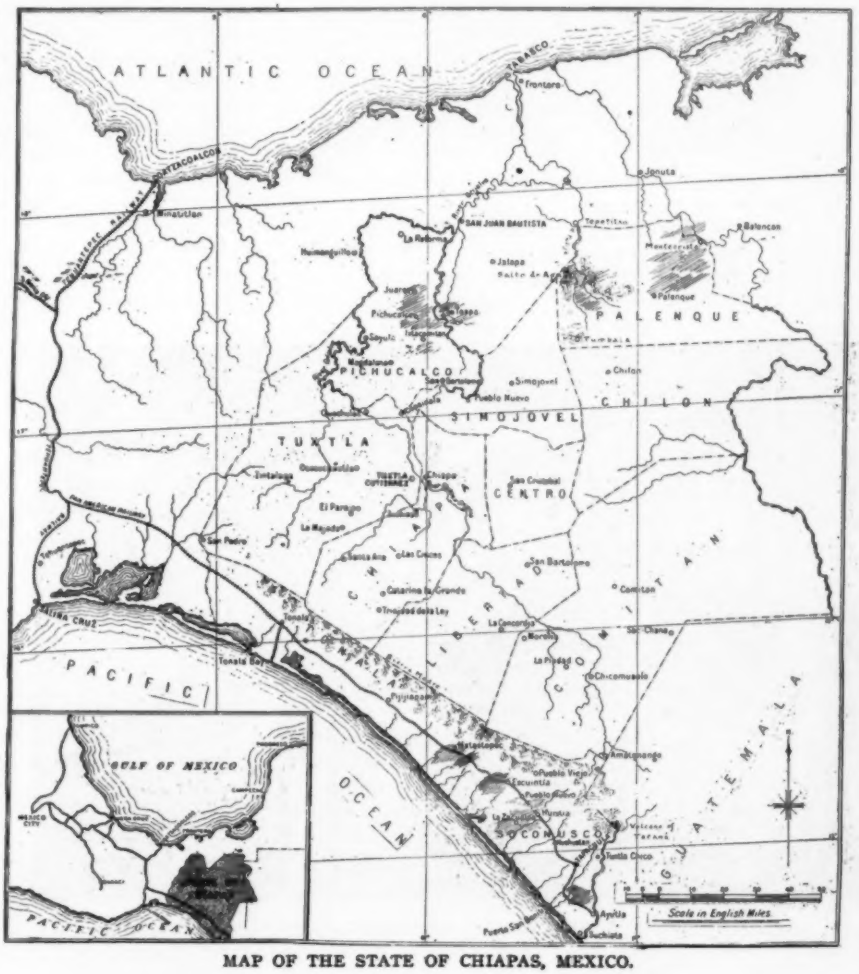
It is a matter of history that the first planting of *Castilloa* rubber in Mexico* was done in the state of Chiapas, near the Suchiate river, which for some distance from its mouth constitutes the natural boundary between Mexico and Guatemala. Chiapas holds also the position of supremacy in rubber planting, having a greater acreage under cultivation than the aggregate of all other rubber sections in the republic. There are two principal planting districts in the state, located in the departments of Soconusco and Palenque; while there are others of less extent in the departments of Tonalá and Pichucalco. These planting districts are indicated by the shaded portions in the accompanying map.

Department of Soconusco.

Some investigators have professed to recognize in the *Castilloa* of Soconusco a species differing from that commonly known in Mexico—namely, *C. lactiflora*, which, it is claimed, is superior to *C. elastica* as a latex producer. There is absence, however, of definite proof.

In Soconusco is situated the well-known plantation of "La Zacualpa," which, with its allied properties, forms the largest cultivated rubber estate in the world. Other smaller plantations are those of "Doña Maria," of the Tapachula Rubber Co., of San Francisco, California; "La Amistad," of Mr. V. Smith; "El Dorado," belonging to The Land Co. of Chiapas (Mexico), Limited, of London; and a number of still smaller properties owned by Mexicans. The several corporations representing the La Zacualpa estates, all having their headquarters in San Francisco, are the following: La Zacualpa Rubber Plantation Co., organized in 1899, owning "La Zacualpa"; Hidalgo Plantation and Commercial Co., organized in 1904, owning "Juilapa"; La Zacualpa Plantation Co., organized in 1905, owning "La Zacualpa II"; Soconusco Development Co., and recently organized, owning "Los Tocayos."

Mr. O. H. Harrison, who for many years has been identified with agricultural and commercial undertakings in Soconusco, is president of La Zacualpa Plantation Co., vice-president of La Zacualpa Rubber Plantation Co., and a director in the two other companies. Mr. C. A. Lesher, as general manager, has been responsible for the scheme of development and all administrative detail relating to these properties since 1902, having been ably aided during the last five years by Mr. W. S. Fisher, as superintendent at "La Zacualpa." Mr. Lesher, in his present capacity of assistant to the president, resides in Tapachula, where



MAP OF THE STATE OF CHIAPAS, MEXICO.

*This statement is supported by the statements of the late Matias Romero, in his book, "Coffee and India-Rubber Culture in Mexico" (New York: 1898), and by various statements which have appeared in THE INDIA RUBBER WORLD in connection with the same, including an article by Charles G. Cano, C.E., in the issue of this journal for August 1, 1901—page 319.—THE EDITOR.

he has charge of all the interests referred to, including the coffee estates of the Hidalgo Plantation and Commercial Co.

The area planted on "La Zacualpa" is somewhat over 10,000 acres; on "La Zacualpa II," 4,800 acres, and on "Juilapa," 3,500 acres—making a total area under rubber of 18,300 acres. On "Los Tocayos" preliminary work is as yet only being done; 5,000 acres are to be planted to rubber, and it is intended to make a start on the same early this year.

The oldest planting of the company on "La Zacualpa," consisting of a few thousand trees, was made in shade, which, at the time, was generally supposed to be the natural requirement of *Castilloa*. This shade is now being gradually removed. There are also several thousand trees 20 years old, which were set out by the original owner of the land, Señor José Maria Pelaez. These latter form a fine forest of umbrageous growth, with a perfectly clean "floor," over which are scattered countless volunteer seedlings. As much as 2 pounds 11 ounces of dry rubber have been taken from a single one of these trees at one tapping, the average yield of one tapping being about 1 pound.

The entire plantation is laid out in rectangular blocks, 350 meters on each side (or 39¼ acres in area), destined ultimately to contain 300 trees to the acre, in accordance with the company's share obligations. The dividing avenues are 7 meters in width, and afford easy access to every part of the estate. The ground is not specially staked for planting, as is customary on the isthmus of Tehuantepec, but, as soon as practicable after the burning, small hills are made, 6 feet apart, for the reception of the seed, small lines being spaced at 12 feet. These hills are prepared a week or two before the planting is commenced, to allow the process of soil assimilation to take place. The making of these hills is rendered necessary by the presence, all over the district, of a layer of volcanic ash (from the eruption of Santa Maria in Guatemala in the year 1902), from two to four inches deep, which, assuming, when wet, a semi-impermeable consistency, would hinder, or even entirely prevent, germination of the seed, if left undisturbed. Some record plantings have been made at "La Zacualpa," as much as 3,600 acres having been cleared and planted in one season.

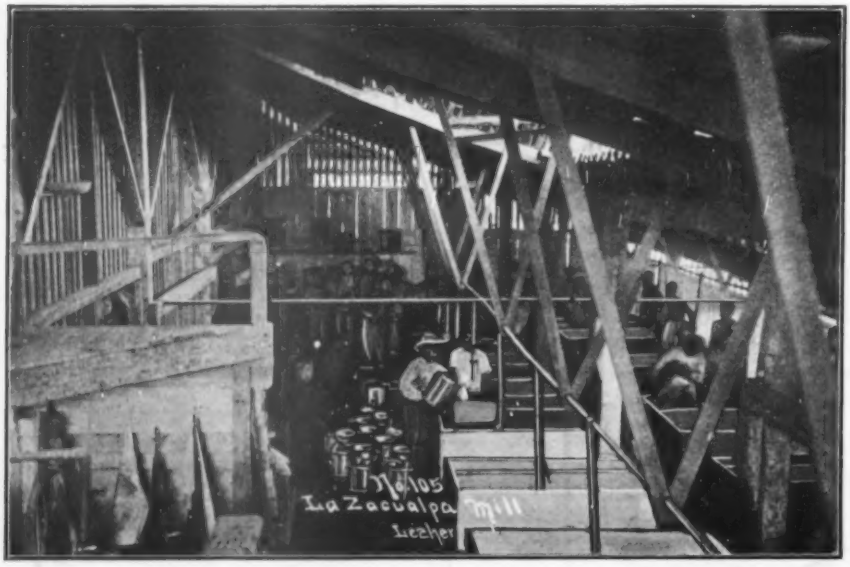
The question of seed selection has been carefully studied, and the result of observations made goes to show that the seed from trees between three and four years old produce the best—that is to say, the quickest—growth; and, since rapid development of tree trunk implies increased thickness of bark, so this, in turn, tends to augment to a corresponding degree the formation of lactiferous cells—which is the ultimate desideratum.

With so vast an area planted as at "La Zacualpa," there are many thousands of trees always ready for tapping, so that this operation continues all the year round, except during a few weeks in the height of the dry season, when the latex does not run freely. The rubber is collected at night, the cooler temperature aiding its flow. The men go out at 2 A. M., and generally get through their task by sunrise. An expert tapper will get 5 gallons of latex, or about 8 pounds of dry rubber. The older trees are being tapped three times a year, although regard is had more to size than age in the selection of trees to be tapped. The yield per tree per tapping for the year 1908, averaged 2.5 ounces—this figure including trees ranging in age from four to eight years.

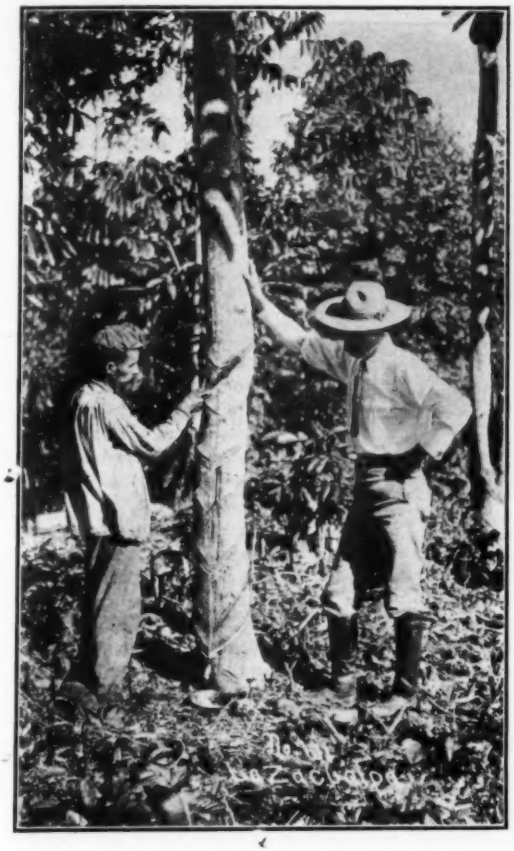
The tapping tool used was designed at "La Zacualpa," embodying a simple device for regulating the depth of the incision and an additional blade for cutting the *cambium*. Experiments were made with numerous forms of tapping tools employed in Ceylon and Malaya for *Hevea* trees, but none was found suitable for *Castilloa*. The greatest possible care is exercised in keeping the knives sharp, so that the cuts made may be clean and free from any tearing effect. The edge is given to the blade on an oilstone, and no files are permitted to be used. A light telescopic ladder is used for tapping the trees at heights beyond a man's reach when standing on the ground.

"La Zacualpa" has a very complete installation for handling its rubber, comprising the following plant: 20 H.P. boiler and engine, driving saw and planer in lumber mill and line shafting; 24 wood and 16 cement coagulating tanks, and two cement waste tanks; 3-roller crêping machine; hydraulic press, making four 25-pound blocks of rubber at one time, and capable of exerting a pressure of 2 tons per square inch and a total maximum pressure of 128 tons; two wooden presses, each of a capacity of 300 pounds of rubber, and one of a capacity of 100 pounds; centrifugal machine, running at 6,000 revolutions per minute, driven by a 3 H.P. gasoline engine, capable of turning out 4,000 pounds of rubber per hour; complete water supply system, and hydraulic ram for raising water to two large cylindrical storage towers. The mill building also includes a drying room holding 40,000 pounds of rubber.

The latex, which is brought in from the field in big specially made zinc cans, is first passed through a double sieve of different sized meshes, to free it from mechanical impurities and all foreign substances; then mixed with clean water in the proportion of 1 to 3. After being allowed to stand for four hours, this water, containing the mother liquor from the latex, is run off into a waste tank, for subsequent treatment in the centrifugal, and fresh water let in. The next day the latex is washed again, and the juice of the "jamole" vine (*Ipomœa bona nox*) added, undergoing a final washing when coagulation occurs. The mass is then removed from the tanks and cut up into pieces of suitable size for running through the crêping machine; rinsed in clean water and sent to the drying room. All of the rubber is prepared in crêpe form and pressed into blocks of 100 pounds each for shipment, the packing boxes being made on the plate of native lumber.



RUBBER MILL AT "LA ZACUALPA" PLANTATION.



ON "LA ZACUALPA" PLANTATION.
[Tapping a six year old rubber tree.]

ON "LUMIJA" PLANTATION.
[Four year old rubber trees.]

It is worthy of mention that the rubber turned out by the centrifugal process from the waste water of the washed latex has proved the best in quality, a recent consignment realizing in London 5*s.* 6*d.* [= $1.33.8 gold] per pound—the highest price thus far obtained for *Castilloa* rubber. As stated in a note in the October, 1909, number of THE INDIA RUBBER WORLD (page 9), this rubber closely resembles fine Pará in appearance, is very clean and very tough, perfectly homogeneous in texture and exhibits, when cut through, sectional gradations of color, such as are produced in Pará rubber by the smoking process. It is anticipated that this mechanical method of preparation will eventually supersede the ordinary coagulating system, and the plant is being extended accordingly.

The average annual rainfall at "La Zacualpa" is between 89 and 90 inches. At "Juilapa," which is located on rolling ground approaching the foothills of the Sierra Madre, attaining an elevation of 300 feet above sea level, the precipitation is about 30 per cent. greater; in the center of the neighboring coffee lands, at altitudes between 2,000 and 4,000 feet above sea level, it reaches 165 inches; while in Tapachula it amounts to 120 inches. The dry season lasts for five months or more. That the rubber on "La Zacualpa" does not visibly suffer from lack of rain during this protracted period may be ascribed to the depth and richness of the soil of the alluvial bottom lands on which the plantation is situated, combined with the moisture retaining property of the volcanic ash incorporated with it.

Portions of the estate were originally so swampy as to be wholly unsuitable for cultural purposes, while freshets often inundated and damaged low-lying plantings. These water-logged areas have now been reclaimed and further danger from floods averted by the construction of an extensive drainage system, totalling over 100 miles in length. The efficiency of the scheme was forcibly demonstrated upon the occasion of the writer's visit to "La Zacualpa" in August, 1909, when there occurred a succession of extraordinarily heavy rains, which washed out a number of bridges and much track of the Pan American railway, but left no water standing upon any part of the plantation. These drains have lately been connected with the main water supply canal, with the object of irrigating the whole of the plantings by means of the same during the dry season. Such treatment, it is believed, cannot but result in materially improving the health, and thereby increasing the productiveness of the rubber trees.

With regard to labor, it is said that "La Zacualpa" has never suffered any serious difficulty on this score. The rate of wages is practically the same as prevails in other planting districts of the country. That the force is a contented one is best evidenced by the fact that pay day comes only once a month, a system which appears to give general satisfaction. A large assortment of goods adapted to local needs is carried by the store, upon which every man may draw within the limit of his credit on the company's books. No intoxicating liquor is sold, and its importation is prohibited.

A considerable amount of money has been expended by the company upon the erection of roomy and substantial buildings for the accommodation of the men and their families, while ample washing and sanitary arrangements have been provided. The general health on the estate is very good, so that there is no need for a resident medical man; but a complete supply of drugs is kept on hand, and cases of malaria and other common tropical

"PHILADELPHIA" PLANTATION—EIGHT YEAR OLD RUBBER.

ailments are attended to by a native expert. The administration staff occupies a handsome and comfortable two-storied bungalow, situated at some distance from the labor quarters and surrounded by a well-kept garden.

The estate is connected with the town of Escuintla by a private telephone line, over which telegrams are transmitted direct from the local federal telegraph office. Wires also run to several outlying camps on the plantation and to the railway station, which latter is reached by a wide, level, and well-drained carriage road.

Rubber has been shipped from "La Zacualpa" since 1901, the first lots having been obtained from the old trees planted by Señor Pelaez and from wild trees on the property. The output from the cultivated trees has steadily increased year by year. Thus, in 1907, 40,000 pounds were shipped; in 1908, 60,000 pounds; while the 1909 crop was expected to reach 80,000 pounds.

The estate of "Doña Maria," situated 12 kilometers from Escuintla, has about 1,700 acres planted to rubber, the age of the oldest being eight years. The first planting was made, as at "La Zacualpa," in shade. Under the management of Mr. F. A. Quinby, the property has been successfully brought to a producing stage, some 5 tons of rubber, of excellent quality, having been shipped in 1908. The output for 1909 probably was 10 tons.

The adjoining plantation of "La Amistad," of Mr. V. Smith, has about 150 acres under rubber, a good proportion of which is also of tappable age.

The "El Dorado" plantation is located some 40 kilometers to the southeast of Tapachula, close to the Guatemalan border, and was opened up only two years ago. At the present time there are under cultivation 500 acres, to contain eventually, after allowing for successive thinnings, 300 trees per acre. The extremely fertile alluvial soil of the district, combined with an ample rainfall, has produced trees of very fine growth. Much havoc was wrought during the first year by "tusas," or gophers (*Geomys bursarius*), notwithstanding the perpetual warfare waged against this destructive rodent by means of traps and poison; but with a liberal surplus of plants to draw upon at each stake, losses thus incurred were promptly made good, so that the stand maintained is considerably in excess of that called for.

The layout and methods of cultivation adopted on this property are generally similar to those in vogue at "La Zacualpa." Under the terms of the development contract, the plantation is to be turned over to the owners in 1912 as a going concern. The enterprise is somewhat in the nature of an experiment on the part of the Land company of Chiapas, and the extension of operations in this direction will be dependent upon the results of the present venture.

DEPARTMENT OF TONALA.

In the department of Tonala, near Mapastepec, three plantations are undergoing development: "El Roblito," of the Roblito Rubber Plantation Co., of Oakland, California, with 5,500 acres of land and 325 acres planted; "El Rosario," owned by the St. Paul Tropical Development Co., of St. Paul, Minnesota, with 7,500 acres of land and 600 acres planted; and "La Aurora," of the Chiapas Land and Stock Co., of Los Angeles, California, with 5,000 acres of land and some 200 or 300 acres planted. All of these plantings were made in 1908 and are in good condition.

On "El Roblito" the stakes were set at 5 feet apart, leaving 10 feet between the lines, the permanent stand to be 10 x 10 feet, making approximately 445 trees to the acre. On "El Rosario" the distance adopted was 7 by 14 feet.

[TO BE CONTINUED.]

"CHIVAL" ESTATE, ORIZABA RUBBER PLANTATION CO.
[Four year old *Castilloa* rubber, at El Salto.]

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

IN some quarters more importance is attached to physical tests of rubber than to chemical analysis, and this both because the physical tests are considered more reliable and at the same time cost much less. It may be of interest in this connection to give the cable specification issued by the London consulting engineers for the Indian State Railways:

CABLE TESTS.

(1) The cable to be of the best quality on drums of specified sizes.

(2) Samples of the vulcanized rubber taken from the cable will be stretched to four times their original length, a 12 inch length being taken between clamps, the temperature being 60 degs. Fahr. When released they are to return to within 25 per cent. of their original length.

(3) Fresh samples are to be submitted, one to a moist heat of 320 degs. Fahr. for four hours, and another to a dry heat of 270 degs. Fahr. for two hours. These samples are to be stretched to 3½ times their original length (12 inches between clamps) for 24 hours at 60 degs. Fahr., and are to return within 25 per cent. of their original length in six hours.

(4) Each length to be tested in water by 1,000 volts, attenuating for 30 minutes.

With regard to these tests it will be noted that while the old Admiralty moist and dry heat tests are retained, they are supplemented by a stretching test which certainly tends to give them some value. In the old Admiralty test the rubber was merely examined after the heating and there was plenty of room for different operators to form different opinions with regard to the result of the tests.

Presumably the stretching tests are intended to indicate whether the best rubber has really been used. How far they do this is a matter in which I do not propose here to enlarge. I think, however, that where the absence of even a few per cent. of certain well known foreign bodies is really desired I should prefer to employ chemical analysis in order to definitely clear up the point.

THE fact that Messrs. R. & J. Dick, Limited, of Glasgow, are building a balata belting works at Passaic, New Jersey, was chronicled in the December issue of THE INDIA RUBBER WORLD. I may add that Mr. Parker Smith's statement at the annual meeting of the company to the effect that the new American tariff of 35 per cent. necessitated this has been challenged in letters to the press. It has been pointed out that as there are no American manufacturers of this belting there is no internal competition to meet. It is further stated that the present unsatisfactory sales of the company's belting in America are due to close European competition, there being now several large manufacturers in Europe, more especially in England. Of course the new move will tend to put the Glasgow firm in a much better position to meet British competition in America, now that the latter will have freight and duty on imports. It will be seen, then, that the case is not exactly one to expound on Protectionist platforms at present. If American firms had risen up in competition with Messrs. Dick it would, of course, have been different. At the moment (I am writing before the General election) Unionist politicians in general are hastily getting up facts and statistics about industries of which they know nothing, in order to preach the doctrine of protection on the platform, and it is not altogether surprising that they sometimes come badly to grief when questioning time arrives. But to keep more particularly to my subject, I rather imagine the fact that all balata belting is not made from pure balata has a good deal to do with the competition which exists. Firms which continue to make and sell only the very best quality must necessarily find it hard to compete with others who sell a second quality either honestly described as such or which is sold merely as balata belting. The properties and uses of the belting have recently been well described by "An Importer" in THE INDIA RUBBER WORLD, and there is no need for me to say more on these points. With regard to the editorial reference to its use in mines for conveying purposes, I have not seen it thus used in England but for elevator belts, which are continuously passed through water. It has become very popular at metal mines in dressing floors.

BALATA BELTING IN AMERICA.

THE death of this commercial magnate will be felt more particularly in Liverpool, which had been his business headquarters for so many years. As chairman of the Chamber of Commerce, and of the great Elder Dempster Shipping Co., and numerous subsidiary undertakings, including collieries and seed crushing mills, he had an almost unique position in the commercial life of the maritime city, and it is noted with satisfaction that his executors are empowered in his will to carry on these various undertakings for at least ten years. The fortune of about £750,000, which he has left is by no means so large as had commonly obtained currency, and no doubt it has been affected by the state of the shipping trade in recent years. It was with the commercial development of West Africa that he was more particularly concerned, though his connection with the new banana industry of the West Indies had led to his sobriquet of the "Banana King." With regard to rubber, though he had a holding in some African plantations, and in conversation with me expressed great interest in the improvement of the processes of collection and preparation of West African brands, his chief connection with the trade was in the matter of shipping African rubbers to Liverpool. The institution for the study of tropical diseases at Liverpool University was due to his initiative and support, and will doubtless come in for a share of his wealth. Another institute he founded was that of commercial research in the tropics also located at Liverpool University. This, however, ceased to exist in 1908, owing to the withdrawal of his support. During its life this institute, with which Dr. D. Spence was associated, was concerned with many problems relating to African rubbers. No one who came into personal contact with the deceased could have failed to be impressed by his energy and capacity for work, and it is commonly said that he wore himself out by his strenuous life. Early and late he was always at it, and usually traveled in a reserved compartment with a secretary and mechanical typewriter. He was the American "hustler" personified in the Welshman, which is somewhat of a novelty. Space only permits me to briefly mention one more of his foundations—the Bank of West Africa, which for the first time introduced the natives to coinage, and has done away to a great extent with the irregularities of the barter system.

THE LATE SIR ALFRED L. JONES, K.C.M.G.

No doubt the prospectus of this important company, which was issued in London on December 15, will find mention elsewhere in this journal, and I need not go into particulars. One or two points, however, may be referred to. The patent to be worked is that of Lumisch, with some improvements, and what are referred to as secrets. The main difference from the somewhat similar patents of Gare and of Hutchison is in the employment of a small quantity of a volatile oil during the compression of the powdered scrap in order to completely drive out the air. It was understood that the name "Premier" could be used, but at the last moment, when the prospectuses had been printed, an objection was taken to it by the Premier Waterproof-

THE PREMIER REFORMING CO., LIMITED.

ing Co., and an alteration in title has since been made. After the prospectus had been published a letter appeared in several papers from Sir Charles Laws-Witterwrange, Bart., saying that he was already working a similar process at the works of the Millwall Rubber Co., London, and saying further that Mr. Berry, one of the experts named in the prospectus, was wrongly described as late manager of the Millwall Rubber Co. This letter was replied to in the press by Mr. Berry, who gave evidence of his having held the particular position mentioned. There the matter remains at present, but I believe I am right in saying that the letter from the Millwall works had a very adverse effect upon the application for shares. I understand that the particular patent which is now being worked at Millwall is Gare's. With regard to the press notices of the new company, it is particularly noticeable that journals which printed two columns of the prospectus very generally referred to it in their notes as being a speculative or risky investment. Thus the *Financial Times:* "The £9,000 secured by the promoters seems quite enough in the circumstances." The prospects of the patent are obviously very speculative, and depend on commercial success and on the public demand for the goods which it might be more economical to obtain manufactured out of new rubber." Of course this is a fair surmise, but as far as I can judge by the present demand for reformed rubber goods it would seem that the plantation rubber people have some reason to look with disfavor upon the new company, as it must have the effect of reducing the demand for new rubber, if the expectations of the prospectus are realized.

GOLOSHES.

HAVING bought a pair of goloshes for the first time in my life I am taking a closer interest in the article than I have formerly done. They bear the inscription "— —, Boston." At the time of writing, the end of December, there have been two or three heavy falls of snow in the north of England, though none in the south. A correspondent to a leading north of England paper says that when he asked in a shop for a pair of British goloshes he was told that there were none now made in England, and that only American ones were kept in stock. The correspondent then suggests that this is case where Protection might be adopted with advantage, and the unemployed get some work to do. Of course it is not correct to say that goloshes are not made in England, though the great bulk of what are sold are of American origin. The editor of the paper in question suggests that they are not made by British rubber manufacturers because the latter find it more profitable to make something else. Without going deeply into tariff reform amenities, I might say that politicians seem to think that everything which is imported into England could easily be made by our unemployed. They overlook the fact that certain firms are preëminent in certain lines of manufacture, because the details of the manufacture are not common knowledge, or at any rate are the outcome of many years of careful application and research. A patent for an improved golosh has recently been taken out by W. Hibbert, the main object being to raise the sole above the ground and thus give further security against water. For this purpose the sole is molded with two or three projections or legs from ½ to ¾ inches high, and about ½ inch broad. It is claimed that the weight of the golosh is not thereby appreciably added to. To the general reader the name of W. Hibbert will probably not recall any association with the rubber trade, and I may say that the gentleman in question whose acquaintance I made more than 20 years ago was the head assistant in the private laboratory of the late Dr. J. H. Gladstone, F.R.S. The joint publication of Messrs. Gladstone and Hibbert on the chemistry of india-rubber, published in the *Proceedings* of the London Chemical Society in 1888, may be cited as the beginning of scientific work on the subject. Mr. Walter Hibbert has done no further rubber research since Dr. Gladstone's death.

EDITORIAL COMMENT.

OUR correspondent's reference to his first purchase of goloshes is particularly interesting in view of his connection with THE INDIA RUBBER WORLD for a dozen years past. It is also interesting in connection with his first purchase having been of an American make. The brand which he names is suppressed here on account of its being what is known in the United States as a "second grade" article. It may not be amiss here to mention that the leading makers of rubber footwear in America produce two grades, which are intended to be sold at prices measurably apart. The manufacturers of the article bought by our correspondent are not excelled by any in the world, in quality or volume of product, but in common with all their competitors they make goods to meet varying price demands. A question which is suggested indirectly by our correspondent's letter is whether, after all, the division of their work into two grades is worth while. The manufacturer may be willing to—and may profit by—accepting two prices for different grades. But do the ultimate consumers benefit from the distinction? Another way to put it is that the purchaser of an American rubber shoe abroad probably pays as much for a "second grade" product as for a "first grade." It is possible that the same thing happens in shops of a good character at home. Then is it worth while to make two grades?

SOME RECENT BRITISH PATENTS.

IN connection with the vulcanizing of leather treads to pneumatic tire covers, British patent No. 18,538—1908, issued to Drury and Grimson, is of interest. According to the specification, an element which may or may not be vulcanizable is attached to a fully cured element by applying solution, and then steam-curing the whole at a low temperature for a long period. Over-curing of the fully cured element is thus avoided. In making leather treaded tires, a strip of leather and the tread, which in this case is nearly cured, are both coated with solution, and when the solution is dry the leather strip is laid on the tread, and the whole is rolled. The tread is then studded and attached by solution to the body of the tire, and the whole is taped on to a core and placed on a perforated tray in a receptacle into which steam is admitted slowly. In one process, steam at a pressure of about 10 pounds per square inch above atmospheric pressure is admitted, and, when the receptacle has warmed up, the pressure is allowed to fall to about 2½ pounds above atmospheric, the cure being completed in about 4 hours. By this process the curing of the partly vulcanized element is completed without over-curing. The process is also applicable to the retreading of worn tires.

A compound waterproof fabric patented by Z. S. Blackadar, of Whitman, Massachusetts (British No. 17,694—1908) comprises a layer of finished leather, to the flesh side of which is glued a layer of thin flexible fabric, containing finely drawn metallic wires, intermixed with the fine textile threads of its warp and weft. The textile material of the fabric affords a suitable surface for the adhesive. The textile threads may be omitted, in which case the wires are more closely interwoven, and the spaces between them are filled with vulcanized india-rubber or other composition. The connection between the leather and the fabrics may be strengthened by stitching.

A recent British patent (No. 18,007—1908), issued to Charles Macintosh & Co., Limited, and two other applicants, relates to a compound material for making floor coverings, floor tiles, boot and shoe soles, and the like. It consists of a surface layer of rubber attached to a backing of felt, etc., which has been proofed, stiffened, and hardened by treatment with glue, etc. The backing may consist of several layers of felt with intervening layers of cork composition or other material, and the rubber may be partly vulcanized before attachment to the backing and completely vulcanized afterwards. Other British patents are mentioned on another page.

The Improved Outlet for Bolivian Rubber.

IF any region can be described as "the heart of South America" it doubtless will be admitted to be included in the republic of Bolivia. This without doubt is the most landlocked country of importance in the world. Larger than most of the kingdoms of Europe, Bolivia has no direct natural outlet to the sea. Having no longer a port on the Pacific it has no access at all to that ocean except through the territory of other and not always friendly nations, besides which land travel to the Pacific must be over the Andes mountains, which rise to a height almost prohibitive of travel and commerce.

AROUND THE RAPIDS OF THE MADEIRA RIVER—OLD REGIME.

It is true that Bolivia is plentifully supplied with waterways which converge gradually until the great Amazon is reached, and through it the Atlantic. But the Amazon flows entirely through foreign countries, and even the mouths of the tributaries through which Bolivian traffic must reach that great river are open only by consent of neighbors. Added to these handicaps is the series of cataracts and rapids which for 200 miles interrupt the navigation of the Madeira, toward which most of the Bolivian rivers flow. The cost of transportation up and down the Madeira seems almost incredible in other countries having navigable rivers, and limits commerce to the more valuable exports—having relation to weight and price—and in the matter of imports to absolute necessities.

Bolivia is of interest to the trade represented by this journal through its unparalleled richness in rubber. Not only do vast areas abound in rubber trees but they yield generously the highest grade of rubber known in the world's market. Bolivia claimed until recently the rich Acre district, important for its production of rubber, and the loss of this territory to Brazil was due largely no doubt to the weakness of the nation caused by its isolated situation. The Acre, without access to the Amazon for export purposes, would have been of little value to Bolivia, however rich in rubber, and it was within the power of Brazil to prevent such access. With the Acre gone the principal rubber fields of Bolivia must depend for an outlet upon the obstructed Madeira.

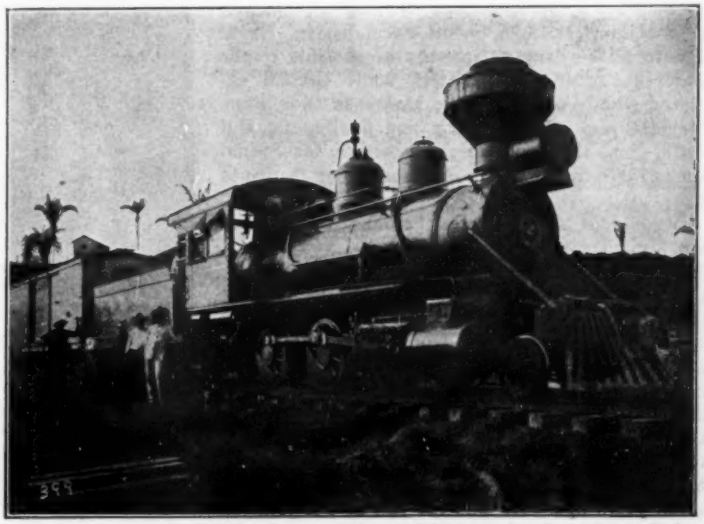
It has been the dream of Bolivia for a half century to overcome the interruptions to shipping on this great river by means of improved roads around the falls, and latterly to build a railway paralleling the river. But the financial development of the republic long made it impracticable for the government to undertake such a gigantic enterprise, and conditions of trade had not developed to a point where the proposition was inviting to foreign capitalists.

It is true that, through the great foresight and the inimitable energy of the late Colonel George Earl Church, a company was organized at one time to build a railway along the Madeira, and it is possible that if the project had been carried out the same success would have resulted that later attended the construction of the Congo railway around the falls in the river of that name, which a few years later opened to the world the rubber realm of King Leopold.

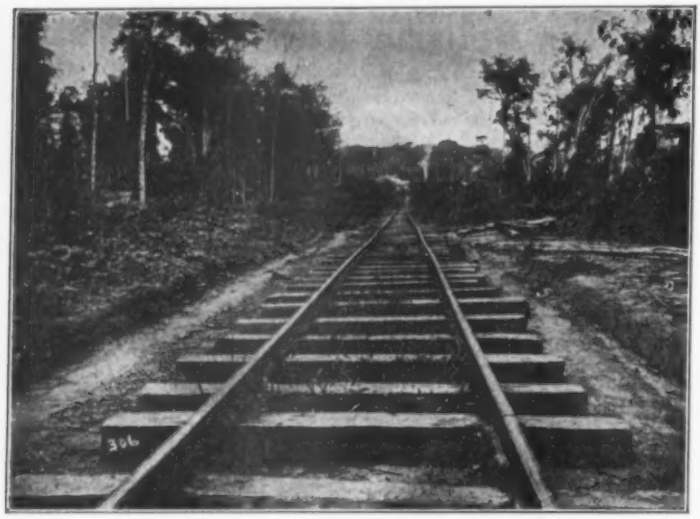
The undertaking, however, by American contractors and engineers, based upon the recommendation of Colonel Church, was handicapped not only by the underestimated obstacle of insalubrious conditions, but by unforeseen political, financial and legal complications, so that after much material had been placed on the ground, and a section of the road was in operation, the whole scheme collapsed. Thereafter for years it was almost impossible to interest the outside world again in another undertaking of the kind.

Meanwhile the world's demand for rubber was growing more pressing, and the extent of Bolivia's supplies was better understood. Not only this, but there are other forms of forest wealth. Bolivia is one of the richest countries in the world for minerals, and soil and climate are favorable to agriculture and grazing.

By the latest treaty between Bolivia and Brazil the latter



AN AMERICAN LOCOMOTIVE IN THE HEART OF SOUTH AMERICA.



THE TRACK OF THE MADEIRA-MAMORE RAILWAY.

has guaranteed the construction of a railway along the Madeira to compensate to some extent for the taking away of the Acre from Bolivia, and the construction of such a road is in progress under conditions which give every promise of its completion in the near future. Starting from the head of navigation on the lower Madeira, this road has been surveyed to reach a point some 200 miles distant from the Mamoré, the largest of the many rivers which converge to form the Madeira.

THE LATE LIEUTENANT GIBBON.

THE Madeira-Mamoré railway, according to Mr. Craig, the chief historian of this enterprise, originated in recommendations made by Lieutenant Lardner Gibbon, U.S.N., in 1852.

The exploration of the valley of the Amazon, under the direction of the United States navy department, in the early fifties, as already mentioned, was conducted by Lieutenant William Lewis Herndon, assisted by Lieutenant Gibbon. Being commissioned to explore the sources of the Amazon, they decided to conduct separate expeditions, parting at Tarma, in the department of Junin, in the interior of Peru—their start having been made, it will be kept in mind, at Lima, on the Pacific coast. Herndon found his way as speedily as possible to the waters of the Amazon itself, while Gibbon explored wholly or in part the Madre de Dios, Beni, Mamoré, and other streams, and finally, the Madeira, from the uppermost cataract to the confluence of this river with the Amazon, going thence to Pará.

Gardner, at his death, was the oldest ex-officer of the United States navy. He passed away at his home at Holmesburg, near Philadelphia, on January 10. Born in Philadelphia August 13, 1829, he was appointed midshipman when about 15 years of age. After having made a worldwide reputation as an explorer, and having won the title of lieutenant, he resigned from the navy before the civil war, during which conflict he served in the navy of the Confederate States, being bound by ties of blood to the Southern cause. He married Miss Alice Shepard, of Newbern, North Carolina, who died seven years ago. He was the son of Dr. John H. and Catherine (Lardner) Gibbon. His remains lie at All Saints' Church, Torresdale, Philadelphia.

THE LATE COLONEL CHURCH.

GEORGE EARL CHURCH was born December 7, 1835, at New Bedford, Massachusetts, of English ancestors who were among the earliest in the new world and who contributed notably to American history. Left early without a father, and with the help only of a public school education gained at Providence, Rhode Island, at the age of 17 he decided upon civil engineering for a career, in which he had attained some distinction by the time he was 21.

At that time a financial crisis occurred in the United States, and Mr. Church found himself in South America, where the Argentine government appointed him on a commission to explore the frontiers, and here he again distinguished himself. The American civil war breaking out now, Mr. Church returned home and entered the forces of the Union as a captain of infantry from Rhode Island. His career as a soldier was most creditable, and marked by many promotions. After the war Colonel Church for a while was engaged in railway engineering.

While General Grant was president, after a consultation with the late Matias Romero, the minister from Mexico at Washington, Colonel Church was entrusted with a delicate and important mission to the latter republic, which resulted successfully. Church next occupied a responsible editorial position on the New York *Herald*.

Indirectly Colonel Church's experience in Mexico led to his being invited by the government of Bolivia to undertake the opening of that country to commerce by way of the Amazon. The history of his life from that time, for a number of years, was the story of promoting what today is known as the Madeira-Mamoré enterprise. As diplomat, engineer, and explorer, he labored until national jealousies had been overcome, concessions acquired, charters granted, and capital guaranteed.

There is not space here for a record of the discouraging developments in connection with the railway enterprise on the Madeira which ultimately compelled the retirement from the field of men so resourceful and courageous as George Earl Church and his associates and supporters. His foresight has now been vindicated, but the world's demand for

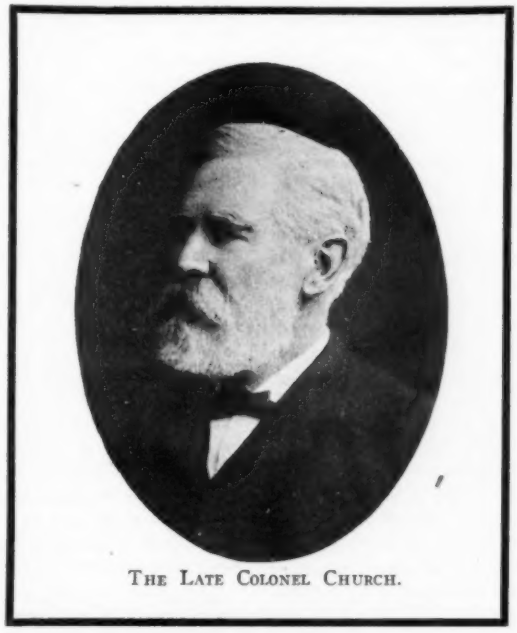
MOSQUITO NETTING HEADGEAR AS USED FOR THE TROPICS.
[Worn by Engineers on the Madeira-Mamoré Railway.]

rubber had not then become so pressing as to make the Madeira road appear to outsiders a necessity, and the fate of the enterprise was left to those who could appreciate the whole thing only as a football for speculative rivals in finance or for politicians concerned only with private gain.

Following his experience in connection with the Madeira railway Colonel Church was entrusted with important government missions, and visited various South American countries in relation to financial and engineering affairs of importance. He was a member of various learned societies, particularly in Europe, and the author of a number of books and scientific papers. He was a companion of the first class of the Loyal Legion of the United States, and despite his long residence abroad there was no better or more loyal American.

The Royal Geographical Society, of London, will suffer a great loss in the death of its former vice-president, for he was considered unquestionably the greatest authority on the geography of South America. Canada owes much to this far-sighted engineer, for the new trans-Canada railroad was originally promoted and surveyed by him. Colonel Church last visited the United States in the fall of 1908, at which time among the many functions in his honor was a special reunion and banquet in Philadelphia of the Madeira and Mamoré Association, composed of the survivors of the "Ill-Fated Expedition."

Colonel Church died on January 5, in London, at his home on Cromwell road, Kensington, of an internal malady from which he had been confined to his bed for some weeks. He married twice. His first wife was Miss Alice Church of New Jersey, who died. Three years ago he married Mrs. Chapman, daughter of Sir Robert Harding and widow of the head of the firm of Chapman & Ball, publishers. Colonel Church was buried in Brompton cemetery.



THE LATE COLONEL CHURCH.

THE LATE ENGINEER D'INVILLIERS.

CAMILLE S. D'INVILLIERS, who died on January 2, was only 26 years of age when he joined the Madeira-Mamoré expedition. After graduation from the Polytechnic College at Philadelphia he was employed (1870-74) as assistant engineer on the Allegheny Valley railroad, and later, until his departure for South America, he was employed on the Pennsylvania railroad. "In addition to technical training and experience," writes Neville B. Craig, "he possessed the equally important qualification of vigorous health, which rendered him capable of more than ordinary physical endurance, and his popularity among the members of the engineer corps secured for him at all times the loyal support of his subordinates.

The early failure in health of C. M. Bird, the first chief engineer of the Madeira and Mamoré railway, caused the promotion to that position, within a few months, of Mr. d'Invilliers, who, although himself early attacked by severe fevers, retained the position thereafter until the end. He, finally, was obliged to obtain a leave of absence—he left San Antonio for Pará, February 17, 1879—and that marked, in the words of Mr. Craig, "the complete collapse of the undertaking."

Following his experience in South America, Mr. d'Invilliers resumed his connection with the Pennsylvania Railroad Co., for which he was, until the time of his death, engineer of construction at Cresson, Pa.

TWO NEW SUBSTITUTES FOR RUBBER.

THE Protal Co., of Bridgeport, Connecticut, will shortly offer to the trade two new products, to which they have given the names of "Protal" and "Protal-Bakelite." Both of these materials consist of a base derived from vegetable substances to which are added substances which render them adaptable for all uses heretofore supplied by rubber and rubber compounds. In physical characteristics these materials resemble rubber, and they may be manipulated by machinery such as is used in the production of rubber or rubber compounds.

In the form of "Protal," the material is suitable for use where the articles produced therefrom are not permanently subjected to the action of moisture, and in the form of "Protal-Bakelite," in any situation where rubber in some one of its forms may be used. "Protal-Bakelite," however, is referred to as having an advantage over rubber in that it is non-oxydizable and therefore does not deteriorate; it is not soluble in oils, in acids or other similar disintegrating agents; it is infusible, and an excellent electrical insulator. Both of these bodies may be loaded with any of the materials used in the manufacture of rubber, and so far as the tests which have been made show, are excellent substitutes for rubber in any of its forms, whether soft, semi-hard or hard—*i. e.*, vulcanite.

The Protal Co. control the manufacture of the materials specified, by reason of patents which have been obtained by Dr. F. G. Weichmann, the inventor, and also licenses for one of the ingredients (a new chemical substance) obtained by Dr. L. H. Baekeland. It is stated that the cost of this material in any form in which it may be manufactured compares favorably with that of corresponding rubber products.

COMMUNICATION ON THE AMAZON.

THE plan of the Amazon Telegraph Co., Limited, to extend their cable facilities in the Amazon River, has been mentioned already in THE INDIA RUBBER WORLD. The manufacture of cable for the extension is already in progress in England, and a recent issue of *The Brazilian Review* states that by December next the line from Pará to Manáos will have been duplicated throughout. This, it is felt, will prevent any such interruption of communication between these two rubber centers as has occurred so often within the past two years, such interruptions being mentioned, whether correctly or not, as the cause of many disturbances in the rubber market, the effect of which is felt as far around the world as Colombo and Singapore.

THE trade generally has been notified that owing to the higher cost of cotton and rubber than prevailed when present prices were established, manufacturers of fire hose will be obliged to make an advance of at least 10 cents per foot.

THE HODGMAN BALLOON FABRICS.

WHILE the conquest of the air by man cannot be said to have been accomplished as yet, the progress made in aëronautics during the past year or so has been so marked that this must be admitted to have become a practical field for human endeavor. Not only this, but the new science, or sport, or whatever it may be termed, has attracted already a wider place in human interest than has ever been the case in the same length of time with a new invention or discovery in the history of the world. The interest to the rubber trade of the development of aëronautics, as has been pointed out in these pages, is due to the fact that rubberized fabrics figure already to so large an extent in the construction both of aëroplanes and balloons, and the results obtained from the use of rubber in this connection have been so satisfactory that the employment of other fabrics is likely to decrease rather than become larger.

It is gratifying to Americans that their countrymen have won so large a share of success in the new field. On account of Americans having been winners in two of the important international contests in aëronautics last year, the prizes won, under the rule, must be contested for this year in the United States, a fact alone which will tend largely to develop American interest in such matters.

The names of some important European rubber manufacturers have been mentioned in THE INDIA RUBBER WORLD as producers on a large scale of fabrics for balloons and flying machines. The American rubber industry has not been backward in making fabrics for the same purpose. It will be remembered that the last formal dinner of the Rubber Club of America, in Boston, in December, was termed an "aëronautic symposium," which was an indication of widespread interest in the rubber trade in aërial flight. The handsome menu card was embellished with views of notable machines for air flight, the fabric for which was manufactured by members of the rubber trade present at the dinner, though no public reference was made to this fact. The fact can be stated here, however, that the balloons which Captain Thomas S. Baldwin has sold to the United States government—a large dirigible and several sphericals—as well as the other balloons made for him have been constructed with the use of fabrics waterproofed by the Hodgman Rubber Co., at their factory in Tuckahoe, N. Y., being made at that place under Captain Baldwin's supervision. The Hodgman company and Captain Baldwin are associated in the further development of the use of rubber coated fabrics in the manufacture of balloons in the United States.

One of the best known products of this association is the balloon "New York" sold to Mr. Clifford B. Harmon, which won the American record for duration in a balloon flight, starting from St. Louis at the time of the centennial celebration in that city, in October last. Harmon remained in the air 48 hours and 26 minutes—the second longest official flight ever made.

In this same balloon Mr. Harmon, with Mr. Augustus Post, secretary of the Aëro Club, reached the great height of 24,200 feet in the fall of last year, which is a testimony to the gas retaining qualities of a rubber coated fabric.

The Hodgman company also are manufacturers of the fabric used in the Curtiss biplanes, including the machine with which Glenn H. Curtiss won the Gordon Bennett international aviation cup at Rheims, last August.

The balloon "New York," guided by Mr. Harmon, made a good record at the International Aviation Meet at Los Angeles, California, during the month just past, making an ascension of 10,000 feet. The same is true of the Curtiss machines at Los Angeles, which won the prizes for speed, quick starts, perfect landings, and those events where a light swift machine showed best.

The Hodgman company have pursued a different course from some other members of the rubber trade, in that their fabrics for balloons are not offered to the trade generally, but are supplied only for use where the construction is under their own supervision, it being deemed best at present not to risk failure in the use of their fabrics through careless or inexperienced construction work outside of their control.

At the factories of the Hodgman Rubber Co. have been carried out an exhaustive series of experiments with regard to the fabrics to be used for certain strains or pressures, and the proper quality of waterproofing in each case. So careful have these experiments been that even the best color for balloon fabrics, for instance, has been studied. Not all the aëroplanes in use are made with waterproof fabrics, but it is coming to be recognized that a plane waterproofed with rubber is superior to one of unproofed cotton, which is liable in rain to shrink; besides it has been suggested that a properly surfaced rubber coated fabric is smoother than any other and thereby minimizes resistance to the air.

CANKER IN PARA RUBBER.

THE original "canker" of *Hevea* has not been much in evidence during the last three or four years, but several cases were notified during the prolonged rainy season of this year (1909), and the subject is being investigated. It has been determined that probably in the majority of cases the death of the bark in patches after the tree has been scraped before tapping is due to "canker," sometimes assisted by deeper scraping than should be allowed. But the most general symptoms exhibited during the current year differ completely from those previously recorded. The disease attacked the renewing bark on the surface which was being tapped. The bark showed numerous vertical black lines, and on cutting it out these lines were found to extend into the wood. These black lines may be found on the cambium before they are evident externally. The bark round these lines decays, leaving a narrow vertical wound.

Sometimes adjacent patches coalesce, and the whole of the renewing bark decays. In most cases the disease does not extend downwards as rapidly as the bark is exercised during tapping, and it is therefore possible to continue tapping although the tree is diseased. With the advent of drier weather the disease stops and the bark renews over the wounds, but as it has to grow in from the edges of the vertical wounds, the renewed bark is rough. Except for this rough bark, there is no permanent injury to the tree.

The cause of *Hevea* canker cannot be said to have been determined. Four organisms have been found fairly regularly in the diseased tissue. Two of these are in all probability only saprophytic and are not being considered at present; the other two are a bacterium and a Nectria. The evidence of the diseased tissue seems to point to the bacterium as the cause, since it is always found in advance of the hyphæ of the Nectria, and the discoloration of the wood is identical with that in the bacterial cultures. But inoculations with both these organisms have so far been unsuccessful.

The bacterium has been isolated and grown in pure cultures, but an attempt to produce "canker" by inoculating tapped surfaces with bacteria from these cultures has proved a failure up to the present in the case of the Nectria, the ripe spores were caught as they were ejected from the fructification, and these were proved capable of germination by sowing them in culture solutions; but no success has yet followed the inoculation with these spores.—T. PETCH, B.SC., B.A., in *Tropical Agriculturist.*

BETWEEN Pará and Manáos it is stated that more than 100 large steamers are engaged in carrying rubber and other cargo and passengers on the Amazon, the waters of which are furrowed by the keels of innumerable smaller steam vessels and sailing craft, not to mention canoes between points only a small distance apart.

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED DECEMBER 7, 1909.

NO. 942,149. Tire. [Outer tube of rubber and fabric, with resilient metallic tubular sections inside.] J. C. Taylor, New York city.

942,364. Vehicle wheel tire. J. A. Boyajean, New York city.

942,418. Tire. [With hollow annular metallic casing.] W. R. Stewart and T. S. Stewart, Saltsburg, assignors of one-third to A. S. Braverman, Avonmore, Pa.

942,500. Metallic protector for pneumatic tires. E. A. Hultberg, Chicago.

942,567. Automobile tire. Iva B. Kempshall, Boston.

942,654. Tire. [With tread supported by springs.] J. G. Maxwell, Washington, Pa.

942,682. Tire protector. F. Vacher, New York city.

942,734. Pneumatic tire. P. G. Muenchinger, Newport, R. I., assignor to E. F. Shiek, Brookline, Mass.

942,787. Flexible conduit. C. H. Miller, West Pittsburgh, Pa., assignor to Safety-Armorite Co., Pittsburgh, Pa.

942,788. Conduit for electric wires. *Same.*

942,789. Flexible electric conduit. *Same.*

942,790. Flexible conduit for electric wires. *Same.*

942,842. Cushion tire for vehicle wheels. J. H. Poole, assignor of three-eighths each to F. L. Price and J. G. Wilde, all of Brockton, Mass.

Trade Mark.

44,248. Key City Roofing Co., Dubuque, Iowa. The word *Dreadnaught.* For prepared rubber roofings.

ISSUED DECEMBER 14, 1909.

942,881. Elastic tire. A. Bonnaz, Lyon, France.

943,002. Armor for tires. S. S. Childs, Bernardsville, N. J.

943,019. Packing for piston rods and the like. G. Huhn, Berlin, Germany.

943,023. Pneumatic packing. E. S. Johnson, assignor of one-half to W. J. Knight, both of Oakland, Cal.

93,054. Apparatus for manufacturing wheel tires. J. K. Williams, assignor of one-half to The Williams Foundry and Machine Co., both of Akron, Ohio.

943,055. Vulcanizing mold. *Same.*

943,146. Horseshoe. H. J. Filliez, assignor of one-third to A. Vignos and one-third to M. L. Keagy, all of Canton, Ohio.

943,172. Lawn sprinkler. C. Ballreich, Publo, Cal.

943,173. Vehicle tire. [Pneumatic, with thick tread.] T. H. Banks, San Antonio, Texas.

943,341. Tire supporter. S. T. Coate and J. T. Saris, Springfield, Ill.

943,416. Hose coupling. C. E. Judkins, Coeur d'Alene, Idaho.

943,430. Vehicle tire. T. W. Lucke, Chicago.

943,446. Wheel tire. H. L. McDuffee, Gilroy, Cal.

943,463. Tire protector. J. Richardson, Buffalo, N. Y.

943,505. Automobile tire. C. E. W. Woodward, assignor to The Fisk Rubber Co., both of Chicopee Falls, Mass.

943,640. Pneumatic tire. A. Latimer, London, England.

Trade Mark.

44,578. Hood Rubber Co., Boston. A band of which the narrow upper edge is in red. For rubber boots and shoes.

ISSUED DECEMBER 21, 1910.

943,658. Manufacture of products containing india-rubber and cellulose. [Consists in mixing cellulose or cellulose solution with the latex of rubber.] P. Defaucamberge, assignor to Société Francaise de la Viscose, both of Paris, France.

943,692. Packing and method of making the same. C. I. E. Mastin, Midland Park, and E. L. Perry, Paterson, N. J.

943,780. Sprinkler nozzle. W. G. Hughes, Norwalk, Cal., assignor to S. K. Elliott and H. G. Miller, Los Angeles, Cal.

943,851. Golf ball marking device. W. T. West, Camden, N. J.

943,946. Telephone mouthpiece. E. H. Long, Los Angeles, Cal.

943,998. Flexible and elastic band for pneumatic tires. P. Roussillon, Argenteuill, France.

944,177. Pen feeder. F. M. Connolly, New Haven, Conn.

944,190. Penholder. H. E. Hoke, assignor of one-half to E. G. Eckert, Hannover, Pa.

944,213. Tire pump attachment. H. H. Rung, assignor of one-half to R. F. Whitmer, both of Philadelphia, Pa.

944,233. Waterproofing composition. [May consist of rubber cement 12¼ parts; spirits of turpentine, 6¼ parts; and gasolene, 81¼ parts.] L. A. Coleman, assignor of one-third each to J. E. Sebrell and H. Abrames, all of Norfolk, Va.

Trade Mark.

44,998. New York Belting and Packing Co., Limited, New York city. The word *Magic.* For rubber hose.

45,456. The Beckley Ralston Co., Chicago. The words *New Century.* For pneumatic tires.

ISSUED DECEMBER 28, 1909.

944,278. Apparatus for filling rubber tires with viscous liquids. A. D. Ray, Cleveland, Ohio, assignor of one-half each to C. J. Callahan and T. Chester, Sunbury, Pa.

944,287. Interchangeable rubber heel. Frank G. Sherman, Chicago.

944,308. Automobile tire. W. J. Bauer, assignor to Bauer Non-Collapsible Wheel Co., both of New York city.

944,339. Vulcanizing mold. F. W. Litchfield, assignor to the Goodyear Tire and Rubber Co., both of Akron, Ohio.

944,351. Vehicle wheel rim. J. M. Alderfer, Sharon Center, Ohio.

944,421. Circular loom. R. E. Evenden, Manchester, England.

944,514. Rim for motor car wheels. D. C. Smith and W. F. Gorton, Muncie, Ind.

944,558. Elastic heel for boots or shoes. C. M. Jaggers, McAlester, Okla.

944,722. Process for making inner liners for tires. B. S. Eshelman, assignor to G. V. Krichbaum, both of Ashland, Ohio.

944,772. Anti-skid attachment for vehicle wheels. T. T. Chaloner, New York city.

944,782. Buoyant bathing suit. P. J. Griffin, Boston.

944,877. Coupling [for hose]. E. A. Koschinski, Scranton, Pa.

944,906. Wheel rim for pneumatic tires. J. Haynes, Manchester, England, assignor to C. A. Bradshaw and W. E. Cuthbertson, Manchester, England, and T. S. Sheldrake, Ilford, England.

Trade Marks.

45,544. The Hanover Vulcanite Co., New York city. The word *Aero.* For hard rubber combs.

45,545. H. W. Buckner, New Orleans. The word *"Robold"* supported by a figure. For machinery packing, hose, and belting.

45,904. The Vulcanized Rubber Co., New York city. The word *Ajax.* For rubber combs.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the affication, which in the case of these listed below was in 1908.

* *Denotes Patents for American Inventions.*

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, DECEMBER 1, 1909.]

16,582 (1908). Pneumatic tire with separately inflated air chambers. E. H. E. Fletcher, London.

16,639 (1908). Inside cushion for boot heels. W. J. C. Schwarz, Liverpool.

16,688 (1908). Rubber cushion tire with triangular cross sections. T. Hill, Walsall, Staffordshire.

16,698 (1908). Pneumatic tire with butt ended inner tube. A. W. Sparkes and S. I. Michaelson, Bristol.

16,738 (1908). Hoof pad. W. E. Lake, London. (Maison Talbot, Milan, Italy.

16,741 (1908). Casing for motor wheels to prevent dust from rising. T. Hunt, Atherstone, Warwickshire.

16,760 (1908). Machine for measuring fabrics. L. V. E. Richards, Long Eaton, Derbyshire.

16,779 (1908). Hoof pad. B. P. Gray, Birmingham.

16,925 (1908). Golf ball consisting of an inner shell of rubber, lined with gelatine and water, wound with linen or cotton, and covered with gutta-percha or india-rubber. W. Thomson, Manchester.

16,958 (1908). Pneumatic tire with puncture and wear preventing band. R. D. Edwards and R. W. H. Rodney, Bristol.

16,971 (1908). Process in which naphthalene is employed for rendering rubber or rubber mixtures plastic. Rütgerswerke-Aktiengesellschaft, Berlin.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, DECEMBER 8, 1909.]

17,134 (1908). Vacuum apparatus for promoting the growth of hair. C. H. Fryer, Surbiton.

17,208 (1908). Machine for cutting and marking fabrics. P. Kauty, Nuremberg, Germany.

17,212 (1908). Vehicle wheel with elastic core. A. Roster, Florence, Italy.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, DECEMBER 15, 1909.]

*17,694 (1908). Method of waterproofing fabrics. Z. S. Blackadar, Whitman, Massachusetts.

17,703 (1908). Sectional pneumatic tire with air chambers in series. L. Brown, Eccles, and C. Macintosh & Co., Ltd., Manchester.

17,845 (1908). Composition for charging tires and balls. Equatorial Trading and Mfg. Co., E. A. Muskett, and J. B. Scammell, London.

17,846 (1908). Molding elastic balls. *Same.*

18,007 (1908). Compound material for floor coverings—including a surface layer of rubber. C. A. McKerrow; Mitchells, Ashworth, Stansfield & Co.; and C. Macintosh & Co., Ltd., Manchester.

18,015 (1908). Means for securing detachable tire carrying rim. S. S. Rogers, Brentford.

18,019 (1908). Swimming appliances. W. Harz, Grossenhain, Saxony.

18,048 (1908). Solvent for vulcanized rubber waste, scrap or raw materials containing rubber; terpene hydrocarbon is used. G. Austerwell, Neuilly, France.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, DECEMBER 22, 1909.]

18,126 (1908). Cover for pneumatic tires. F. Veith, Höchst, Germany.

18,164 (1908). Puncture preventing shield for pneumatic tires. H. Pfeiffer, London.

18,174 (1908). Protective cover for pneumatic tires. J. Muff-Minder, Zurich, Switzerland.

18,298 (1908). Golf ball. A. Macdonald, Troon, Ayrshire.

18,301 (1908). Device for setting wire cored rubber tires. A. E. Dancaster, London.

*18,307 (1908). Elastic tire with tread of staggered blocks. A. M. MacFarland, Philadelphia, Pa.

*18,346 (1908). Pneumatic tire with special thickened tread. J. L. G. Dykes, Milford, Illinois.

18,445 (1908). Detachable outer rim for pneumatic tire. Société Francaise des Jantes Amovibles Bonhivers, Levallois-Perret, France.

18,455 (1908). Pneumatic tire in which a heavy rubber tread is supported upon a pneumatic tube inclosed between side plates. E. Degener Böning, Frankfort o/M., Germany.

18,462 (1908). Vehicle wheel having inner and outer rims with an intermediate thick rubber band. T. R. Bayliss, Northfield, Worcestershire.

18,538 (1908). Vulcanizing of pneumatic tires. W. Drury, London, and Viscount Grimson, St. Alban's.

18,545 (1908). Non-slipping attachment for motor wheels. F. M. Waller, Weymouth.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, DECEMBER 30, 1909.]

18,504 (1908). Pneumatic tire cover. Viscount Grimson, St. Albans, and W. Drury, London.

18,608 (1908). Detachable rim for pneumatic tires. H. Jones and W. E. Evans, Morristown.

18,671 (1908). Spring wheel with inner and outer rim, separated by an elastic cushion. P. J. Marmonnier, Lyons, France.

18,810 (1908). Non-elastic rubber tire retained by means of nuts which engage with the spokes. W. Cunningham, Galston, Ayrshire.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

403,120 (May 18). E. A. Garvey and C. A. Garvey.

403,138 (April 16). Pfeiffer and Whitworth.

403,207 (May 18). J. G. Tomkins and V. Tomkins. Elastic heel.

403,393 (Sept. 22, 1908). L. L. Chabrua. Elastic tire.

403,438 (May 28, 1909). de Bavay. Pneumatic tire.

403,531 (May 26). Gabriel et Cie. Protector for pneumatic tire.

403,631 (June 3). Société anonyme des Pneumatiques aix Samson. Pneumatic tire.

403,446 (May 28). M. C. Clark. Apparatus and method of devulcanizing rubber.

403,673 (June 4). V. Daussy. Vehicle tire.

403,677 (June 4). A. Constantin. Protective tread for tires.

402,596 (April 30, 1909). Phil. Penin Gummiwaarenfabrik, A. G. Process and apparatus for producing circular striations on the outer surface of seamless rubber pipe.

402,881 (May 10). H. R. Krastel and G. Ulrich. Auxiliary tire for automobile wheels and their equipment.

402,996 (May 13). F. Laarman. Process for producing a frothy or spongy elastic structure by the use of a solution of elastic material such as: rubber, cellulose, or their equivalent.

403,120 (May 8). E. A. Garvey and C. A. Garvey. Pneumatic deadener for vehicles.

403,138 (May 16). Pfeiffer and Whitworth. Improvements in devices for preventing the bursting of air tubes in pneumatic tires.

403,218 (May 22). T. Sloper. Improvements relating to anti-skidding surfaces for tires or other rubber articles.

403,416 (May 27). Société Industrielle des Telephones. Applications of special dialectrics for the insulation of cables or electric conductors.

403,700 (June 5). H. B. Parham. Shoes for detachable pneumatic tires

403,723 (June 5). E. Brodin. Pneumatic bicycle tire.

403,820 (June 8). L. D. Baggs. Automobile tire.

403,826 (June 8). L. G. Queval. Pneumatic tire with leather tire and multiple air chambers.

403,849 (June 9). C. J. Viviez. Elastic tire.

403,888 (June 11). L. Perroncel. Process of pneumatic tire manufacture.

403,942 (June 11). P. Blaubach. Process for the manufacture of linoleum.

404,023 (June 14). J. A. Florencie. Envelope for aerial vehicles.

403,917 (Oct. 6, 1908). C. Francois. Elastic tire.

403,976 (June 12, 1909). Flexible Tire Co., Inc. Tire.

404,002 (June 14). Cassan. Pneumatic tire.

404,038 (June 14). G. A. Lyon and Wilson. Protective tread for tires.

404,049 (June 15). G. C. Taylor. Pneumatic tire casing.

404,163 (June 18). J. F. Spong. Elastic tire.

404,021 (June 14). A. Nunes. Leather and rubber tire.

404,051 (June 15). D. MacArthur and Macintosh. Pneumatic tire.

404,218 (June 19). H. Long. Removable pneumatic tire for bicycles.

404,232 (June 19). Continental-Caoutchouc und Gutta-Percha Compagne. Solid rubber tire.

404,451 (June 25). G. Bonguillon. Leather envelope for pneumatic tires.

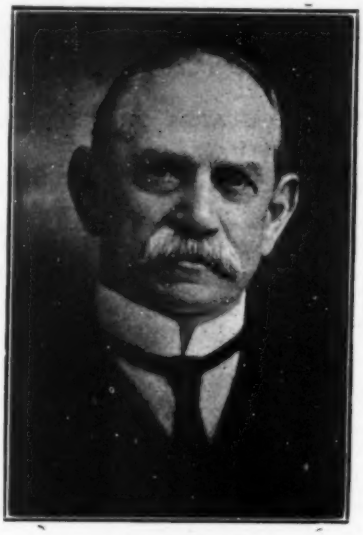
404,307 (June 22). Generale Caoutchouc Co., Ltd. Process for the separation of resins from caoutchouc.

404,334 (June 23). P. G. Penn. Process for the regeneration of waste vulcanized rubber.

404,357 (Oct. 16, 1908). L. Turcat and G. Nuth. Process for the preparation of elastic objects from gum lac.

[NOTE.—Printed copies of specifications of French patents can be obtained from R. Robet, Ingenieur-Conseil, 16 avenue de Villier, Paris, at 50 cents each, postpaid.]

HIGH ENEMAS.—Soper, in the *Journal* of the American Medical Association, concludes from skiagrams taken, that only in rare cases does the so-called high rectal tube pass up into the sigmoid. In abnormalities of the sigmoid it may pass further than seven inches into the rectum before bending on itself, but not in the common case.

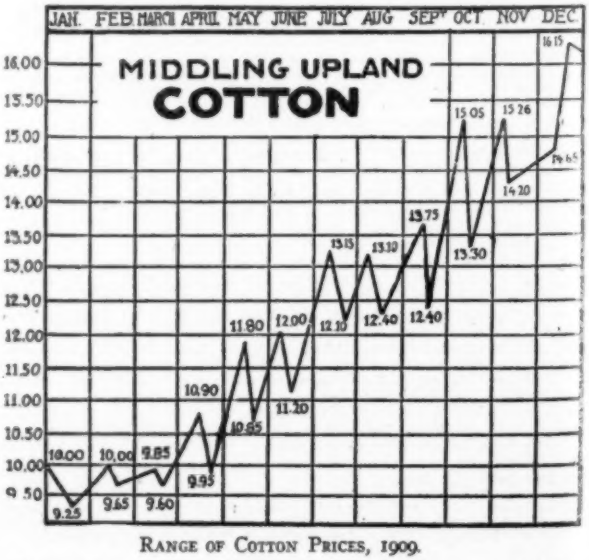


THE LATE JOSEPH DAVOL.

[The photograph from which the above portrait has been made was preferred by Mr. Davol to that used in connection with his obituary in THE INDIA RUBBER WORLD, August 1, 1909 (page 386).]

THE PRICE OF GUAYULE SHRUB.

IN a report on guayule in northern Mexico, the United States consular agent at Torreon says that the value of the shrub has increased steadily from $2.50 gold per ton in the field during the year 1903, to the present price of $25 to $35. At $35 per ton of shrub in the field, calculating a distance of 30 to 40 miles to the railroad, the shrub costs the factories laid down at their doors about $75 per ton. The amount of rubber extracted varies from 8 to 16 per cent., depending on the class of shrub. The high price is caused by the scarcity of shrub on the market; it is estimated that there are not over 8,000 tons of shrub that are not contracted for, and most of this is on two or three properties. Very nearly 200 metric tons are worked up daily in the factories in Torreon and Gomez-Palacio.



RANGE OF COTTON PRICES, 1909.

[Middling Upland Cotton, New York Cotton Exchange. From the New York *Times*.]

GOODRICH RUBBER BELTING

Largest Factory and Most Complete Equipment in the World for the Manufacture of Rubber Goods

STANDARD CONSTRUCTION BELTS

"The Goodrich," the finest that can be made.
"Pilgrim," for all general requirements.
"Rob Roy," our commercial grade for ordinary work.

SPECIAL BRANDS

"Goodrich Axle Lighting," of special design for railroad axle lighting.
"Sterling," what its name implies.
"Pinnacle," the strongest and highest quality ***coverless belt*** produced.
"Marathon," a coverless belt for high speed wood working machines.

Elevator Belts for all kinds of mine and grain elevating.
Conveyor Belts for all conveying uses.
Polishing Belts for emery, and polishing wheels.

THE B. F. GOODRICH COMPANY
AKRON, OHIO

NEW YORK BELTING AND PACKING CO., Ltd.

MANUFACTURERS OF A COMPLETE LINE OF HIGH GRADE

MECHANICAL RUBBER GOODS

Including Cobb's Piston & Valve Rod Packing, Indestructible White Sheet Packing, Vulcan High Pressure Spiral Packing, "1846" Para Rubber Belting, Magic Garden Hose, Air Brake, Air Drill, Steam, Suction, Water Hose, etc.

Original Manufacturers of Interlocking Rubber Tiling.

Nos. 91-93 CHAMBERS STREET, NEW YORK

RUBBER BELTING

"SHIELD HIGH-GRADE" BRAND

Every foot guaranteed in strongest possible manner

We make everything in rubber

Our warrant is indelibly stamped upon every Belt to protect the user

Write for Catalog and prices

THE MECHANICAL RUBBER CO., CLEVELAND, OHIO

The Rubber Trade at Akron, Ohio.

By a Resident Correspondent.

COMPANY MEETINGS.

AT the annual meeting of shareholders of The B. F. Goodrich Co., on January 19, the report made on the business of the year was satisfactory, but in accordance with the policy of the company no statement was given out. The regular quarterly dividend of 2½ per cent. was announced. The directors were reëlected: George T. Perkins, George W. Crouse, B. G. Work, F. H. Mason, H. E. Raymond, E. C. Shaw and C. C. Goodrich. The board reorganized and elected officers as follows:

President—BERTRAM G. WORK.
First Vice-President—FRANK H. MASON.
Second Vice-President—H. E. RAYMOND.
Secretary and Assistant Treasurer—CHARLES B. RAYMOND.
Treasurer and Assistant Secretary—WILLIAM A. MEANS (succeeding Walter A. Folger).
General Manager of Works—E. C. SHAW.

The shareholders of the Swinehart Tire and Rubber Co. met on January 17. The directors chosen were Frank B. Theiss, William Byrider, R. A. May, Joseph Dangel, J. A. Swinehart, W. W. Wuchter, and Frank R. Talbot, the latter succeeding J. O. Surbey. The last quarterly dividend is 2 per cent. The officers elected are:

President and General Manager—W. W. WUCHTER (formerly vice-president, to succeed J. A. Swinehart, who has retired from active participation in the managing end of the business).
Vice-President—JAMES A. SWINEHART.
Secretary—C. O. BAUGHMAN.
Treasurer—R. A. MAY.

The directors decided to call a meeting of the shareholders for February 16, to vote on a question of increasing the capital, which is now $200,000.

The shareholders of the Colonial Tire and Rubber Co., who control the Firestone "Sidewire" tire patents in Europe, held their annual meeting on January 14, and elected as directors James A. Swinehart, P. D. Hall, William Byrider, John Byrider, and Frank E. Whittemore, of Akron, Ohio, and F. S. Lahm, of Paris, France. A 10 per cent. annual dividend was declared. The officers elected are:

President—FRANK S. LAHM.
Vice President—JAMES A. SWINEHART.
Secretary and Treasurer—P. D. HALL.

The annual meeting of the Whitman & Barnes Manufacturing Co., who formerly maintained a rubber manufacturing department, but do not now, held their annual meeting at the general offices in Akron on January 11. The directors are: George T. Perkins, C. B. Raymond, A. B. Rinehart, William H. Eager, A. D. Armitage, George A. Barnes, C. E. Sheldon, and C. I. Bruner, of Akron, and William H. Gifford, of Syracuse, New York. Officers elected:

President—C. E. SHELDON.
Vice-President—A. B. RINEHART.
Treasurer—WILLIAM H. EAGER.
Secretary—GEORGE A. BARNES.
General Manager—A. D. ARMITAGE.
Sales Manager—F. C. BLANCHARD.

Colonel George T. Perkins, in the board of this company, is also a director of The B. F. Goodrich Co., and C. B. Raymond, who succeeds William Stone, of Chicago, as a director, is secretary of the Goodrich company.

At the annual meeting of the Mansfield Rubber Co., at Mansfield, Ohio, on January 11, the directors elected were: C. H. Walters, F. H. Walters, and F. M. Bushnell, of Mansfield; C. R. Grant and F. A. Wilcox, of Akron; Dr. James E. Waite, of Lodi; and Dr. R. C. Kinnaman, of Ashland, Ohio. Officers elected.

President—FRANK A. WILCOX.
Vice-President—CHARLES H. WALTERS.
Treasurer—F. M. BUSHNELL.
Vice-President—CHARLES H. WALTERS.

GOODRICH BUILDING DETAILS.

THE overflow from all their crowded departments will be housed in the two factory buildings just completed by The B. F. Goodrich Co. The work of installing machinery has been going on all through the month. The greatest part of the space will be devoted to the making of tires. The buildings are six stories high, 80 feet wide and the longer one, flanking Goodrich street, is 400 feet long.

It is understood that the directors of The B. F. Goodrich Co. have decided to proceed in the early spring with the construction of six-story factory buildings on the land acquired during the last year on Falor street and along the Ohio canal, a sum approaching $1,000,000 having been appropriated already for this purpose.

GROWTH OF THE DIAMOND PLANT.

EXCAVATIONS have been started for the third of the large six story factory buildings planned by The Diamond Rubber Co. on Jackson street. The first of these was built two years ago and now houses the insulated wire department. The second has just been completed, and is being occupied by tire making apparatus chiefly. The old tire building, completed in 1903, is being converted into a warehouse. The third building was decided upon at the meeting of directors after the annual shareholders' meeting in October. It will be built in the form of an L, connecting the other two buildings, with one arm along Jackson street and the other arm extending north from Jackson street parallel with the other two structures. It will be approximately 250 feet long on Jackson street and 140 feet long in the other direction. The new Diamond office building has been completed and is being occupied by the various departments which have been overcrowded in the present offices. Laboratories are being equipped on the lower floor. This building, located on Falor street, is three stories high and provides 12,000 square feet of floor space. The old offices are being lengthened by the inclusion of 3,000 square feet taken from the factory.

THE GROWTH OF AKRON.

TENTATIVE foot frontage valuations placed on Akron property by the quadrennial board of real estate appraisers, now in session, show that land has increased in value from 100 to 500 per cent. during the ten years since the last appraisement was made. The highest valuation in the city is on the downtown property and is fixed at $1,150 a foot front, exclusive of buildings.

Contracts have been let by the Second National Bank of Akron for the construction of a six-story office building, 111 x 140 feet in ground dimensions. It will be built at once. Several rubber manufacturers are directors and stockholders in the institution, Mr. F. H. Adams, treasurer of the Goodyear Tire and Rubber Co., having been elected to the board on January 12.

AIR VERSUS GAS FOR TIRES.

EXPERIMENTS were made recently at the plant of The Diamond Rubber Co. to determine whether or not gas is superior to air for inflating tires. Gas is often used in garages to pump into tires because it is quicker. The Diamond experimenters came to the conclusion that air is better. Three tires were inflated with air to a pressure of 100 pounds, and three other tires filled with carbonic gas at the same time and to the same pressure. Exactly seven days later the air filled tires registered 92 pounds each and the three gas inflated tires showed only 41, 50 and 51 pounds pressure. Because gas escapes from a tire more rapidly than air, tire experts of the Diamond company condemn its use as an inflation medium.

OTHER NEW FACTORY CONSTRUCTION.

LEAVE has been granted by the secretary of state to the Stein Double Cushion Tire Co. to increase their capital stock from $100,000 to $200,000. The expansion is intended to accommodate the addition of automobile tires to the company's products. New machinery has been purchased and installed to provide for the manufacture of 100 tires of the "lap-lock" type per day. The company, it is reported, intend to put up an additional building next summer. The officers of the company are C. K. Sunshine, president, and M. M. Neuman, secretary and treasurer.

In spite of heavy snow and frozen ground a steam shovel was put to work early in January on the excavations for the additional buildings planned by the Goodyear Tire and Rubber Co. The digging was started as soon as the final arrangements for the vacation of Prune street were completed with the city. All possible haste will be made in rushing the buildings to completion.

Protests by property owners against the vacation of city streets in the site of the new Firestone factory have delayed the preparations for construction. Negotiations are under way, however, for the settlement of the disputes and Mr. H. S. Firestone says he will be able to make a definite announcement as to the factory plans by the middle of February.

AEROPLANE TIRES.

THE B. F. Goodrich Co. are about to place on the market as a regular product an aëroplane tire. Several hundred have already been manufactured in the Akron factory for the Herring-Curtiss Co., of Hammondsport, New York, manufacturers of the Glenn H. Curtiss flying machine. The company is expecting the field to develop a business well worth getting. The construction of the tire is a modification of the Palmer bicycle tire, which has been manufactured by the Goodrich company for a number of years. Buoyancy and strength are the qualities which have been sought. The tires are smaller than bicycle tires, being 20 inches in diameter, while the tubes are thicker, being 2 and 2¼ inches in tube diameter, while the average bicycle tire is 1½ inches through. Orders are also being taken from other aëroplane manufacturers.

RETIREMENT OF MR. FOLGER.

MR. WALTER A. FOLGER, who retired as treasurer of The B. F. Goodrich Co. at the recent meeting, intends to leave active participation in business altogether and will go with his family for the Pacific coast, where they will spend several months. Mr. Folger is 52 years old and has been treasurer of the Goodrich company since 1894, leaving the position of cashier of the Second National Bank of Akron to accept that office. Reared in a nearby country town he worked his way up from a clerk's position and in his years of efficient service for the Goodrich company has well earned the right to retire. Mr. Folger is succeeded by William A. Means, who has been assistant treasurer.

FIRE AT MANSFIELD.

FIRE of unknown origin destroyed one of the buildings of the Mansfield Rubber Co., at Mansfield, Ohio, on January 12. The structure, built of brick, 44 x 84 feet in ground dimensions, was used as a machine shop and storehouse. Crude rubber estimated to be worth $10,000 was lost, and the entire loss is placed at $16,000. President F. A. Wilcox, of Akron, says that the building will be restored at once and that the fire will not interrupt the manufacture.

PERSONAL MENTION.

MR. B. G. WORK was elected to succeed Mr. A. H. Marks as president of the Portage Country Club at the annual meeting early in January. Mr. Marks was made secretary and chairman of the house committee. Mr. C. B. Raymond, Mr. A. H. Noah, Mr. W. B. Miller, and Mr. H. S. Firestone were elected to the board of directors. During the spring extensive improvements are to be made on the golf greens. The names mentioned are those of prominent members of the Akron rubber trade.

Mr. H. S. Firestone, president of the Firestone Tire and Rubber Co., and Mr. F. A. Seiberling, president of the Goodyear Tire and Rubber Co., were elected to the board of directors of the National City Bank of Akron on January 11.

A number of rubber manufacturers heard Dr. W. H. Tolman, director of the New York Museum of Safety and Sanitation, lecture on questions of safeguards for the workmen in factories, in this city, under the auspices of the Akron Chamber of Commerce, January 13.

BRIEF NOTES.

WHILE details of The Diamond Rubber Co.'s new footwear department are being steadily worked out under the direction of Mr. Charles P. Hart, the company are not yet ready to make any definite announcement as to the personnel of the selling department or the list of goods to be manufactured. They assure, however, that the new department will turn out a very complete line of footwear, ranging from tennis shoes to hip boots.

The Akron Rubber Mold and Machine Co., the incorporation of which was reported in the last INDIA RUBBER WORLD (page 149), have made some important contracts for supplying molds to rubber factories.

S. G. Carkhuff, secretary of the Firestone Tire and Rubber Co., spent January in a tour through the west, visiting the company's various branches and agencies in western and Pacific coast cities.

The Akron tire industry was well represented at the two automobile shows in New York in January. From the Goodrich company went H. E. Raymond and A. J. Wills; from the Diamond company, James A. Braden, Theodore Weigele and O. J. Woodard; from the Goodyear, G. M. Stadelman, W. D. Shiltz, F. A. Seiberling, C. W. Seiberling and P. W. Litchfield; and from the Firestone, H. S. Firestone, R. J. Firestone, A. G. Partridge and J. F. Singleton.

The Rubber Trade at Trenton, New Jersey.

By a Resident Correspondent.

THE Ajax-Grieb Rubber Co., following their rapid extension, have just completed another addition to their factory, and have also purchased a large plot of land for further growth. The real estate purchased is a tract 600 x 200 feet, on Breunig avenue, opposite the present main buildings.

The building just completed measures 100 x 60 feet, and is three stories high. It is a substantial structure with concrete main floor, corresponding with the other main buildings. The company have also installed a lot of new machinery, including a battery of improved vertical hydraulic vulcanizers and a series of the latest tire wrapping machines.

The concern now have about 115,000 square feet of floor space, including about 75,000 square feet in the new plant, and 40,000 square feet in the old Grieb plant and in the storehouses. In connection with the splendid power plant the company have installed their own electric lighting outfit. The buildings erected since the consolidation with the Grieb company are model structures and the equipment is the best that can be obtained.

The company are very busy, the factories running night and day. The outlook is that the rush will continue for at least six months. Automobile tires form the main line of the company, and in this department the trade is exceptionally brisk. The

concern is having a big run on the "Ajax" non skid checkered tread automobile tire, which has been out about a year. In their druggists' sundries and other lines the company are also doing well, with the trade outlook good.

* * *

THE Luzerne Rubber Co., manufacturers of hard rubber goods, have plans drawn for an addition to their plant, measuring 200 x 40 feet and two stories high. The building will be of concrete construction. A section of it 70 feet long will be erected as soon as the weather opens enough for building, and the remainder will be constructed later. The company report business good and the trade outlook bright. In the electric line trade is good, and the indications are that in the automobile line there will be an increase in business. A representative of the company stated that one result of the recent automobile exhibitions in New York was to greatly increase the demand for magnetos in the equipment of cars, and this will mean a boom in the manufacture of the hard rubber parts. The Luzerne company have already had several of their orders doubled since shows opened.

* * *

JOHN E. CLANCY has tendered his resignation as secretary of the Mercer Rubber Co., of Hamilton square, and has retired from active duties in connection with the company. He is still a director, however. He has been succeeded by F. R. Sayen, who has been made secretary and assistant treasurer. W. H. Sayen, Sr., is president, and W. H. Sayen, Jr., treasurer. The company report business very good, with prospects looking bright. The factory is running overtime in the hose department. An additional story 100 x 50 feet has been erected on one wing of the plant, to take care of a largely increased trade in fruit jar rings and similar goods.

* * *

CLIFFORD H. OAKLEY, president and general manager of the Essex Rubber Co., joins in the general statement in Trenton that 1910 will be a good year for the rubber manufacturer. His factory is busy and the outlook is for increased business. The concern makes rubber specialties, and though it is one of the newer companies in the Trenton market, Mr. Oakley says a nice business is being built up.

* * *

OWING to increased business the Vulcanized Rubber Co. have had to increase the boiler capacity of their plant in Morrisville, Pennsylvania. An addition has been erected to the boiler house and a new boiler installed. The factory is busy and officers of the company state that the business outlook is very promising.

* * *

THE Atlas Rubber Co., which manufactured a patented armored hose, have gone out of business after an existence of only about two years. Their retirement from manufacturing followed litigation over the patent. The concern was capitalized at $125,000 and made its hose first at the plant of William R. Thropp, manufacturer of rubber making machinery, and later at the factory of the United and Globe Manufacturing Co.'s.

* * *

WILLIAM R. THROPP, builder of rubber manufacturing machinery, is making a special 60-inch vulcanizer, a jacketed vulcanizer, and several heating tables 18 x 7 feet for the New Jersey Rubber Co., of Lambertville.

The Rubber Trade at San Francisco.

By a Resident Correspondent.

UNINTERESTING but engrossing is the work of stock taking and inventory, which holds the men of the rubber establishments of this city, and as to trade conditions they seem to have little voice, other than that there seems to be more money for the payment of bills, which is making collections better, and that the outlook is good for a prosperous new year. There is improvement in the tone of business everywhere, as evidenced by a lively holiday trade which the general run of retail stores enjoyed. Confidence is greatly restored and on all sides there is evidence that business has come back to a normal state and that commerce is entering upon an era of prosperity. One of the best things noticeable in and about San Francisco is the civic pride which is being aroused, and the way in which business men are taking hold of whatever tends to advertise and make more desirable their naturally favored city.

* * *

PROPRIETORS of rubber houses in this city are heard to say that San Francisco is overrun with agents and small dealers who carry lines of rubber goods. "I know of no city in the Union," said one dealer, "that is so overrun with men who make it their business to supply mechanical goods in small quantities." Another merchant stated that many of these sprung up as a result of the 1906 fire, at a time when it appeared that the older houses were done for and that there was room for a new set. All of the older houses are in business the same as ever and these new men are doing the best they can, some of them no doubt making good, some possibly not, but their presence of course tending to cut prices and split up the business. There is and can be no complaint against the men who are out for themselves, individually or collectively, as any dealer in considering the oversupply willingly admits that each man has a right to compete for his own welfare. It is but a passing comment on a condition which seems to exist. "The local rubber business might be said to be congested," said another dealer. "I believe," he continued, "that if this city were suddenly isolated so that the supply of mechanical rubber goods were cut off entirely, there would be enough stock on hand to last for more than two years."

* * *

THE Young Sanitary Manufacturing Co. are now located on First street, with an initial plant to start the making of the sanitary toilet seats. Shortly a big factory will be established.

The Bulger Patent Hose Coupling Co. has been incorporated in San Francisco, with a capital of $100,000. J. D. Spreckels, a capitalist of this city, is at its head, and the production of this invention will be commenced. Messrs. Bulger and Grant, owners of the patent, have successfully launched the company and expect great things of their threadless hose coupling.

The report from the Plant Rubber and Supply Co. is that trade is picking up a little, and that the indications for the new year are very good. Mr. B. T. Alexander, formerly the treasurer, is no longer connected with the firm, having disposed of his interest to Mr. Plant and Mr. Crandler.

* * *

MR. ALEXANDER, formerly of the Plant Rubber and Supply Co., has become more heavily interested in the Mill and Mine Supply Co., having purchased the interest formerly owned by William Patterson, who is no longer connected with that firm.

Mr. Bennett, representing the New Jersey Rubber Co., has been up from Los Angeles, visiting his friends in the local trade.

Since Mr. U. R. Grant has gone into the specialty manufacturing business, his former place with the Eccles & Smith Co. is being filled by Mr. Shaw, who quit his position with the Revere Rubber Co. to take Mr. Grant's place.

The Bowers Rubber Works suffered several thousand dollars loss by a fire which recently consumed a portion of the upper floor of their reclaiming plant at Black Diamond, California. The loss was not so heavy as at first reported, and is fully covered by insurance. The factory is in operation as usual. Mr.

Chase, manager of the firm, says of trade conditions that from their point of view conditions are very favorable.

* * *

C. E. MATHEWSON, Pacific coast manager for the Diamond Rubber Co., left recently for New York to attend the automobile shows, and before returning will spend a little time at Akron. For the year of 1909 this firm has fared well on the coast, according to returns shown by Mr. Mathewson, by D. E. Hughes, the agent at Seattle, and by the Los Angeles agent.

As a result of contributions given from the various rubber houses of this city, "Bobby" Brightsman is now in the sunny, hardy climate of Arizona, with plenty of money to stay as long as he likes and recuperate his health. Mr. Brightsman was formerly with the Goodyear Rubber Co.

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MR. L. L. TORREY reports an active business for the Pennsylvania Rubber Co. Mr. J. H. Reed has been appointed to act as manager for the branch just established at Los Angeles. Mr. Reed was one of the partners of Coombs & Reed, formerly selling agents of the company at Los Angeles. The new establishment is located at No. 930 South Main street.

Mr. A. Leonard, manager of the W. D. Newerf Rubber Co., local distributor of the Goodyear tires, reports an exceptional record for the past year in automobile tires. He believes that the coming year will be better still.

Reports from Honolulu indicate that the rubber business there is in a very flourishing condition, as shown by the reports at the annual meeting of the Hawaiian Rubber Growers' Association, held in December.

Captain F. H. Gerry, who has been appointed mining representative of the Revere Rubber Co., with offices at their new store, No. 543 Market street, has charge of their trade in the mining country in the western parts of the United States, Mexico, and Canada, and also in Alaska. He was some time branch manager at Baltimore, Maryland, for the Boston Woven Hose and Rubber Co.

The New Rubber Chemical Section.

AT the recent meeting of the American Chemical Society, held in Boston, during the closing meeting of last year, an action was taken which will undoubtedly prove of great interest to the rubber industry. In the first place, a Rubber Section was organized. The organization of this section brought out the fact that there was ample room and a great desire for such an organization, as the discussions which took place during the two sessions of the section were extremely lively.

At the organization of this section Mr. Charles C. Goodrich, of New York and Akron, was elected president, and Dr. Frederick J. Maywald was elected secretary. The section also appointed a committee, consisting of Dr. Charles Knight, of Buchtel College, Akron, Ohio; Edward A. Barrier, of the Factory Mutual Laboratories, Boston, Mass.; Frederick J. Maywald, of New York; Milton E. McDonald, of the chemical staff of the Pennsylvania railroad; William G. Hill, of the American Rubber Co., East Cambridge, Mass.; Sheldon P. Thatcher, of the Peerless Rubber Manufacturing Co., New Durham, N. J.; W. C. Geer, of The B. F. Goodrich Rubber Co., Akron, Ohio; Mr. Oelschlaeger, of The Diamond Rubber Co., Akron Ohio; and Harvey M. Eddy, of the Boston Woven Hose and Rubber Co., to take up the question of working out a standard method for the examination, both chemical and physical, of manufactured and crude rubber.

This committee will first take up the question of the examination of compounded rubber, and then, in due time, the methods of examination of other rubbers. The first step the committee will take along the line of the examination of compounded rubber will be to ask the various rubber manufacturers to send to the committee—condently, or anonymously if they wish—the methods of analysis and examination which are in use at their laboratories. These various methods will then be discussed by the committee, and from the information so obtained, the methods of analysis and examination which appear to be most generally used will be laid out by the committee, and these proposed methods will then be tested out practically on standard samples by the committee itself. When the committee is reasonably satisfied that the proper methods have been obtained, samples will be sent to other

DR. CHARLES KNIGHT.
[Chairman of Committee to Organize Standard Methods of Rubber Analysis.]

FREDERICK J. MAYWALD, F. C. S.
[Secretary of the Rubber Section of the American Chemical Society.]

rubber chemists who wish to co-operate with the committee in obtaining standard methods.

There is no question that there is the greatest need, at the present time, for such work as this committee proposes to undertake. The members of the committee need no introduction to the rubber manufacturers, and consequently there need be no hesitation on the part of the rubber men to give the committee the fullest possible information. No public use will be made of any such information obtained, without the express permission of the sender. Thus it will not be possible to trace the source of information, unless the sender so desires.

Communications for the committee may be sent to Mr. Charles C. Goodrich, No. 2 Rector street, New York; Dr. Charles Knight, Buchtel College, Akron, Ohio; Frederick J. Maywald, No. 89 Pine street, New York; or to any member of the committee.

THE AMERICAN CHEMICAL SOCIETY.

IN connection with the recognition of the rubber industry by the formation of rubber section by the American Chemical Society at the annual meeting of the latter, held in Boston during the closing week of last year, some account of the purposes and history of the American Chemical Society doubtless will be of interest to the readers of THE INDIA RUBBER WORLD.

The history of the society has been one of steady growth and advancement. It had its inception in 1874, when a representative group of chemists met at Northumberland, Pennsylvania, to celebrate the centennial of the discovery of oxygen by Dr. Joseph Priestly, and the other remarkable discoveries and achievements which occurred in the year 1774.

Out of this meeting grew the American Chemical Society, which was started in New York City in 1876. Professor C. F. Chandler, of Columbia University, took a leading part in the organization of the society, and the late W. M. Habirshaw, well known throughout the rubber trade, was a member of the committee on preliminary organization. The first membership list contained the names of 53 resident and 80 non-resident members, a total of 133. The present membership is about 4,800, making it one of the largest scientific bodies in the world, and indicating a remarkable growth. From its organization the leading chemists of this country have been identified with the society, and it bears on its roll of honorary members the names of those whose achievements have made them famous throughout the world.

The constitution of the society declares its object to be "the advancement of chemistry and the promotion of chemical research." Membership is not confined to professional chemists, but is open to any person interested in the promotion of chemistry. There are also corporation members, which corporations (or firms or association, as the case may be) have the privilege of being represented by a delegate at meetings of the society, and of receiving the publications of the society.

For a number of years after the organization of the society, all its meetings were held in New York City; but it was found that this led to a falling off of interest in the non-resident members, and the policy was adopted of forming local sections. The society now works under this plan. There are 32 local sections scattered throughout the country, four new sections having been organized within the last year.

The society has grown so large and covers so much ground that it has now been organized into professional divisions and sections, such as the Division of Agricultural and Food Chemistry, Division of Fertilizer Chemistry, Division of Industrial Chemists and Chemical Engineers, etc. The Rubber Section is the latest one of these sections to be organized, and expects before long to graduate into the division class, which is larger than the section.

The society holds two general meetings a year, each time in a different place from that of the last meeting, and the local sections hold frequent meetings, usually once a month. The next general meeting will be held at San Francisco in the coming summer.

Three journals of great value are published by the society—the *Journal* of the American Chemical Society, containing papers of general interest contributed by members; *Chemical Abstracts*, a compilation of abstracts from chemical publications, both American and foreign; and the *Journal* of Industrial and Engineering Chemistry, devoted to applied chemistry. These are sent to all members of the Society n good standing. The last named publication was started only a year ago, but has already proved of great value to the members; likewise the Abstracts, started in 1908. The *Journal* has been published from the first.

The various local sections maintain reference libraries of chemical literature, for the use of the members.

The most rapid growth of the society has occurred in the last few years, and is an indication of the remarkable increase of interest in chemistry. The coöperation of such a large body of members greatly broadens the field of usefulness of the society, and enhances its value to the individual member. The benefits of association with members of the same profession and of the excellent journals provided by the society are of course manifest. The stimulation given by research and the interchange of ideas redounds to the benefit of the manufacturer, and it is a creditable fact that manufacturers are realizing this more and more.

The general officers of the society for the present year are: Professor Wilder D. Bancroft, of Cornell University, president; Professor Charles L. Parsons, New Hampshire College, Durham, New Hampshire, secretary; Dr. Albert P. Hallock, of New York, treasurer.

RUBBER PEPARATION IN TOBAGO.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Well may the little island of Tobago rejoice in the success of one of her rubber planters, who has recently discovered and patented a method of preparing rubber from fresh latex in sheets of any given size by means of a few minutes' spin in a centifugal specially adapted for the purpose. The sheets come away from the machine perfectly coagulated, and only need the usual time in the drying house. In the machine used, four sheets 10 x 6 inches are made at one spin, the thickness being regulated by the amount of caoutchouc contained in the rubber fluids or latex. The rubber is of excellent quality and both *Castilloa* and *Hevea* can be treated. Fuller particulars with specifications will shortly be available. The makers are the celebrated firm of Messrs. John Gordon & Co., Fenchurch street, London, and the inventor is Harry S. Smith, of Caledonia, Tobago, who is in a position to cry "Eureka" (I have found it). As is the case with nearly all useful inventions the principle is remarkably simple and the wonder of those who have inspected it is that it was not discovered long ago. The machines will shortly be put upon the market in sizes to suit large and small proprietors.

J. H. HART, F. L. S.

Trinidad, December 20, 1909.

THE tenth annual edition of "The India-Rubber, Gutta-Percha and Electrical Trades Diary and Year Book," dated 1910, brought out by *The India-Rubber Journal*, is based upon the same plan as the preceding numbers of the series. The volume is larger, however, on account of the various departments of information suited for ready reference by rubber men having been enlarged. The book includes the usual blank pages for daily memoranda throughout the year.

THE gross product of The Meriden Rubber Planting Corporation at Tula de los Tuxtlas, Vera Cruz, Mexico—well dried *Castilloa*—was sold about December 1, on the plantation, at $1.50 per pound.

The British Rubber Craze.

TO the list of 76 new plantation companies havnig to do wholly or in part with rubber, registered, in Great Britain since July 1, 1909, which appeared in the last INDIA RUBBER WORLD, may now be added 46 other companies, completing the record for the last six months of the year. The total number of such companies is 122 and the total amount of capital stated £8,641,427 [=$42,053,504.50]. As mentioned last month, this list has no relation to the companies formed meanwhile in other European countries, and those brought out in Ceylon and elsewhere in the Far East. Without doubt the totals for the six months represented the capitalization of $50,000,000. The companies not mentioned in the first list are:

CEYLON.

Molesworth Brothers' Rubber Estates, Limited; December 3	£70,000
Walaboda Tea and Rubber Co., Limited; December 7	10,000

FEDERATED MALAY STATES.

Bujong Rubber Estate, Limited; Selangor; December 3	£40,000
Dennistown (Krian, F. M. S.) Rubber Estates, Limited; Perak; November 20	150,000
Straits Rubber Co., Limited; Perak; December 18	350,000
Glasgow Malayan Syndicate, Limited; December 6	10,000
Bradwall (F. M. S.) Rubber Estate, Limited; December 11	90,000
Cheviot Rubber, Limited; December 13	90,000
Hillside Rubber Estate, Limited; November	30,000
Chota Rubber Estates, Limited; Selangor; December 15	50,000
Malay and Mid-East Rubbers, Limited; December 10	6,000
Bagan Serai Co., Limited; Perak; December 17	40,000
Rubber Estates of Krian, Limited; November 19	100
Teluk Anson Rubber Estates, Limited; November 13	60,000
Selaba Rubber Estates, Limited; Perak; November 10	125,000
Bikam Rubber Estates, Limited; Perak; November 8	60,000

STRAITS SETTLEMENTS.

Sempah Rubber Estates, Limited; Province Wellesley; December 7	£30,000
Sungei Bahru Rubber Estates, Limited; Malacca; December 13	75,000
Sedenak Rubber Estates, Limited; Johore; December 2	100,000
Arundel Rubber Estates, Limited; November 25	8,000
Kelantan Rubber Estates, Limited; Kelantan; November	60,000

INDIA.

Orkaden River (Travancore) Rubber Co., Limited; November 11	£25,000
Kedamakal Rubber Syndicate, Limited; December	30,000
Majagram Tea Co., Limited; Assam; December 10	55,000
Indian Peninsula Rubber and Estates, Limited; November 15	150,000

DUTCH EAST INDIES.

London Sumatra Rubber and Produce Estate, Limited; Sumatra; December 3	£80,000
Javorneo Syndicate, Limited; October 22	375
Aengsono (Java) Rubber Plantations, Limited; November 19	30,000
English Nederlandsche Rubber Exploitable Syndicate, Limited; November 4	2,000

EAST AFRICA.

British East Africa Rubber and Cotton Estates, Limited; December 22	£50,000
Suahili Rubber and Fiber Co., Limited; East Africa Protectorate; November 18	5,000

CENTRAL AFRICA.

Cie. des Plantations de Mayumba; French Congo; November 16	£42,000
Chipande Coffee and Rubber Company, Limited; November 9	10,000

WEST AFRICA.

French Ivory Coast Syndicate, Limited; December 13	£3,050
African Lumber and Rubber Syndicate, Limited; November 8	3,000
Mincing Lane Rubber and Produce Co., Limited; November 8	2,000
Boinsu Estates Syndicates, Limited; Gold Coast; November 16	8,000
Avreboo Rubber Estates, Limited; Gold Coast; November 17	65,000

BRAZIL.

Rubber and Coffee Estates of Brazil, Limited; November 19	£24,000

GENERAL.

[Including companies for which no region is named.]

Kerala Rubber Co., Limited; December 1	£40,000
Elphil Rubber Co., Limited; November 30	20,000
Margarini Rubber Syndicate, Limited; December 17	4,000
Menabe Syndicate, Limited; December 11	2,037
Tanah-Abang Syndicate, Limited November 19	5,000
H. N. Syndicate, Limited; November 20	1,000
B. N. B. Plantations, Limited; October 9	3,005
Tropical Development Association, Limited; November 15	3,015
Rubber Options, Limited; November 13	5,000
Parie Buntar Syndicate, Limited; November 5	6,000
Scottish Tea and Rubber Trust Co., Limited; November 4	150,000

THE PROSPECTUSES ANALYZED.

THE customary form of prospectus, by means of which Britishers are invited to invest in rubber, starts out by stating that the company has been formed "to acquire, maintain, and further develop" certain estates, comprising so many acres, "planted with rubber and"—cocoanuts or something else—all of which has been reported on by "the late manager" of the Vallambrosa or some other widely known successful rubber estate. It is not recalled that during the period covered by this review any rubber plantation company has been floated in London on the basis of known or assured production of a matured rubber estate. It is altogether a question of estimates, on the idea that if some one estate has proved profitable, all neighboring properties must prove equally so. It may be recalled here that when the Vallambrosa company, for example, was formed, the shares were taken by the proprietors of the estates involved, and the public was not invited to come in! Which may serve to explain the 80 per cent. dividends of the Vallambrosa company.

The meat of all the rubber plantation prospectuses which occupy so much space in the advertising columns of journals from *The Times* down is to be read in the provisions which the law requires to be printed by way of contracts to which the newly formed company is liable. For example, in the prospectus of a single company, advertised on November 9 last, no fewer than nine such contracts are enumerated, beginning with the original options for purchase, transfers, and so on, all winding up with some such stipulation as—

> The said K—— and the said W—— wil be entitled to the difference between the sum of £75,000 payable by the vendors under contract 7 and the sum of about £69,000, which has been or will be paid [the difference amounting to about $30,000], in respect of the properties or the agreements relating thereto above referred to. The vendors are a syndicate incorporated as a private company in England and has [*sic*] a nominal capital of £6,000, divided into shares of £1 each—[and so on, *ad infinitum*].

No wonder that many readers of column after column of such details fail to suspect that the whole transaction is a series of private sale after sale among the same promoters of the same properties, and the final unloading of the whole upon the public. And after that the public may look out for itself. The promoters can hardly be blamed, however, in view of the anxiety of the public to buy anything under the name of "rubber." Items like this are not unusual in the financial columns of London newspapers:

> The 30,000 shares in the S—— Rubber Estates, Limited, having been over-subscribed, the list was closed yesterday, Wednesday, at 4 o'clock. [The list was advertised to remain open until Thursday.]

These are the exact words of a notice published in respect of an estate in Malaya, capitalized at £100,000 [=$486,650], and so manipulated that only £30,000 was offered to the public. But there is no promise of rubber for three years to come.

What follows relates to an entirely different company, and is quoted from *The Financial News*:

At the "statutory" meeting of the new Jangen (Java) Rubber Estates Co., Limited, the chairman said: "The prospectus was issued on December 6, asking for applications for £30,000 debentures, for which we received application for the sum of £120,000, but as the old shareholders had a claim to preferential treatment, and applied for a large sum, the directors were able to allot only a small number of debentures to the public. - - - Your directors anticipate that tapping will probably commence during the latter part of 1910 over a small acreage."

The appended extracts from recent rubber prospectuses may prove of interest:

Thirty Pounds Per Tree Per Year.

From the prospectus of Dennistown (Kriaas F. M. S.) Rubber Estates, Limited, registered in London in November, 1909, with £150,000 [= $730,075] capital stated, to acquire four existing rubber plantations in Perak. (The directorate embraces some of the most reputable names connected with practical rubber culture today):

[The expert on whose report this company was floated said]: "Owing to the richness of the soil and its proximity to water, the yields will greatly exceed that on most estates in the Federated Malay States, and in this connection it may be interesting to mention that in the hospital grounds at Pavit Buntav [which at one time formed part of the estate lately conveyed] there are seven 16-year old Pará rubber trees which are being tapped on behalf of the government under my supervision. These trees gave an average of nearly 30 pounds dry rubber each last year, and for the first six months of this year [1909] an average of 19 pounds 6 ounces dry rubber each."

Promoters Cannot Wait for Reports By Mail.

From more than one prospectus.

"The statements in this prospectus relating to the estate are based mainly upon the cable report by Mr. D——, above referred to."

"Mr. C—— in the above report gives no estimates as to yield; he was accordingly asked to do this, and a cable has been received from him giving the following, etc.:"

The Chinese Know When to Get Out.

The Chinese, who have settled in large numbers in the United States, where they are excelled by no class as peaceable inhabitants (they cannot become citizens), have gained the impression there of never conducting a business proposition at a loss.

A review of a recent "batch" of nine new rubber plantation prospectuses indicates that in the case of five of the enterprises, Chinese vendors stand to profit, more or less, by the transfer of ownership of property.

Congo Rubber and the Antwerp Market.

In their annual review of the Antwerp rubber market for 1909 Messrs. Grisar & Co., the official brokers, again confine their remarks mainly to the decline of the natural supplies in the Belgian Congo (formerly the Congo Free State), and the outlook for rubber cultivation there. First, however, may be introduced a table of the arrivals of rubber at Antwerp during the last ten calendar years:

Years.		Congo State.	Other Sources.	Total.
1900	*Kilos*	4,902,003	796,032	5,698,035
1901		5,417,456	431,742	5,849,202
1902		4,992,954	411,031	5,403,985
1903		5,180,401	546,082	5,726,483
1904		4,723,618	1,040,238	5,765,856
1905		4,442,607	1,271,121	5,713,728
1906		4,593,759	1,178,303	5,772,062
1907		4,346,141	708,332	5,054,473
1908		4,262,531	772,813	5,035,344
1909		3,492,332	1,193,626	4,685,958

Messrs. Grisar & Co. say:

"If, in consequence of the changes introduced in the economical régime of the Congo, and in addition, the remission of the tax on certain centers of population (which heretofore devoted themselves to gathering rubber), there is a rather serious diminution in importations [at Antwerp], we are able to confirm, on the other hand, an increase in the importation of other kinds, which continue to find an easy and remunerative sale in our market, at approximately, in general, the figures obtained elsewhere for these same varieties.

"One fact of prime importance for our market has been brought out in the course of the past year. We mean the annexation of the Congo to Belgium. Viewing the matter solely from the viewpoint of the importance which this event cannot fail to have for the Antwerp market, we believe it interesting to examine briefly the great reform measures which will be regularly introduced in our new colony.

"The government, in fact, has just decided to abandon to private enterprise the exploitation of rubber in the Belgian Congo. This measure will become effective in three successive periods—*i. e.*, at intervals of one year, beginning with the first of next July.

"Another change, the importance of which will not escape the attention of well informed persons, has just been made in the economic organization of the colony: The Belgian government, convinced of the great importance for the future of coördinating the system of plantations, the latest and most authoritative data concerning this industry (comparatively a very new one) in order to have everything run smoothly in the future, has decided to take this question under its patronage.

"The obligations imposed on every one who gathered rubber in the lands or forests of the State to plant a number of rubber trees has been replaced with a tax of 40 or 20 centimes, according to the method of rubber extraction from trees, *lianes* (vines), or *rhizomes* (root rubber). This tax is levied on the amount of rubber in kilograms exported.

"This measure has been forced upon the government because the application of the legal provisions has not produced the results anticipated—the coördination of the plantations having been found impracticable, as much on account of the imperfect technical training of the persons employed for this purpose as by reason of the difficulties daily to modify essentially the systems themselves that are put into practice.

"The amount of this tax will be applied to a special fund for replanting, in view of the regular establishment of state plantings; these will comprehend about 2,000 hectares [= 4,942 acres] annually, so that in 10 years the colony would come to have a considerable fund, the revenues from which will largely increase the budget and rapidly diminish the expense of operation.

"We might add that the government is prepared to encourage private enterprise in the direction indicated, and to this end will put at the disposition of private enterprise all the data and information that it possesses, as well as vacant land suited to the culture, at very attractive figures.

"In conclusion, we would also point out that the greatest development of the Belgian Congo henceforward will be due to the cultivation of the *Hevea*. That of the *Funtumia* will be of secondary importance, the same as the planting of other rubber trees and *lianes*.

"There is no doubt that the Belgian parliament will grant the necessary approbation for the carrying out of this fine programme, and we have this to thank for being able to face the future with great confidence.

"There is nothing special to be said this year about the quality of the Congo rubber, which, in general, has been some-

what improved. The occasional small lots from the [Congo] plantations have been very much appreciated by the purchasers and brought very high prices.

"The hopes that were entertained by the proprietors of the important plantations in the Far East were fully borne out during the year just past. The growth of the trees leaves nothing to be desired, and the returns of rubber exceed the most optimistic forecasts, increasing in due proportion with the development of the trees. The quantities exported (in pounds) have been:

YEARS.	Ceylon.	Straits.	Total.
1900	8,233	....	8,233
1901	9,072	....	9,072
1902	15,592	....	15,592
1903	41,798	1,000	42,798
1904	77,212	13,000	90,212
1905	168,547	207,500	376,047
1906	327,024	1,028,792	1,355,816
1907	556,080	2,278,870	2,834,950
1908	912,124	3,539,922	4,452,047

"In view of these results, and although it may be premature to regard the cultivation of the *Hevea* in all the Belgian Congo territory as an assured success, it is nevertheless interesting to be able to state that the attempts made in our colony (and especially in the equatorial region), in extraction from the first *Hevea* introduced there, have given very encouraging results, and for the most part, as favorable as those obtained in the Malay archipelago, both as regards the amount of rubber gathered and the quality of the product obtained.

"Prices.—Before reviewing the violent fluctuations to which rubber has been subject during the year in question, it seems to us interesting to recall the fact that in February, 1908, during the course of the panic in America, the Pará sorts touched the lowest point—*i. e.*, 2*s.* 9*d.* [=67 cents]. Toward the end of the year, however, with a constant improvement in the situation, the Pará recovered the price of 5*s.* 1*d.* Reviewing the year 1909, we find that from the early months in the year there was a constant shipment of the article for the American account at increasingly high prices, until October, when the Pará touched the exceptional figure of 9*s.* 1*d.*—the highest price known in the history of the trade.

"This enormous rise seems to have been due to the aftermath of the financial crisis, which had left in America in 1908 a large shortage in the manufactured article. On the other hand, the enormous development of the automobile industry in America must not be ignored in accounting for this tremendous consumption.

"In the closing months of the year, however, calmness again reigned and the prices of the Pará declined slowly but steadily, closing at 7*s.* 6*d.* This continuous decline, coincident with the abundant harvest now being 1*s.* in Pará, seems attributable to the general lack of purchases by the consumers and importers, who are expecting to be able to lay in a stock in this way under favorable conditions. In fact, the decline had little effect on the Congo varieties, which closed in great demand.

"The different Congo varieties did not always follow proportionately the ascending prices of the Pará during the long period of high prices, and to these circumstances are due the steady prices constantly maintained by the Congo varieties at the close of the year, at the time that the Pará steadily declined to 7*s.* 6*d.*"

COMPARATIVE ANTWERP PRICES (FRANCS PER KILO).

	Dec. 31, '08.	Dec. 31, '09.	Increase.
Kasai, red, I	12.35-12.85	14.00-14.37	11.86%
Loanda II kind	8.75- 9.25	11.00-11.50	24.32%
Kasai, black	12.35-12.85	14.00-14.37	11.86%
Equateur, Ikelemba, Lopori, etc.	12.35-12.85	14.25-15.00	16.73%
Upper Congo, ordinary	11.00-11.50	13.25-13.50	17.39%
Uruwimi-Uelé	11.00-11.50	13.25-13.50	17.39%
Mongala strips	11.00-11.50	13.25-13.50	17.39%
Red thimbles (root rubber)	4.25- 4.75	9.00- 9.70	10.22%
a. Pará fine	5s.-5s. 2d.	7s. 2d.-7s. 6d.	14.16%

[*a* In English money, per pound.]
[Ten francs per kilogram=87½ cents per pound.]

Rubber Interests in Continental Europe.

HOW GERMANS SEEK TO PLEASE TRADE.

THE remarks by a writer in the January INDIA RUBBER WORLD on the success of the German rubber manufacturers in the department of export trade is fittingly supplemented by the following correspondence of Mr. Watson R. Sperry, of Harburg a/d Elbe, in the important American newspaper, the Hartford *Courant:*

"The other day one of the rubber factories here in Harburg received an order for a thousand pounds from Japan. This establishment makes nothing but erasers—in all sorts of shapes and colors, and for rubbing out pencil and other kinds of marks. These pieces of rubber are small, and as a matter of fact some styles run 40 pieces to the pound, and some as high as 80 to the pound. The condition of the order was that each piece should be stamped with a little pagoda. I was consulted as to exactly what a pagoda is, and it was in this way that I came to know about the matter.

"As a result of this consultation a satisfactory drawing was prepared, a stamp was made after the drawing, the 50,000 or 60,000 separate pieces were stamped by hand, and the shipment of a thousand pounds was finally made from Hamburg direct to Kobe and other Japanese ports, and in precisely the form that the local trade in Japan desired.

"I mention the incident as an illustration of the care which German manufacturers take to meet the precise wishes of their foreign customers. To such a house as this the order in itself was not of great importance; but the business had been built up by making the goods to suit the tastes of buyers, not merely in Germany, but in all parts of the world, and this rule is still followed, although the yearly output now runs into the millions.

"The plant was prepared with special marks for the China trade—a dragon's head, a fan, and one other which I cannot recall—all made under suggestions from those who sell these articles in China, and who now sell them steadily there largely because these emblems suit the local taste; but the order from Japan opened new territory, and the miniature pagoda had to be made.

"The story goes that in the early years of the world's market, when England made most of the goods and the rest of the world bought them, English manufacturers reckoned it for a barbarity if any people did not like English taste, English measures and English weights. Our consuls even now sometimes write home that American goods would sell better if they were more often made to suit the tastes and usages of those who are expected to buy them.

"The Germans need no instruction on this point. They have taken for their rule that sensible old mercantile motto, 'We strive to please'; and indeed in some cases go so far as to cram up on the measures and weights of the land to which their wares are sent, so that the local dealer can verify what he is getting exactly as if it were made in his own country."

RUBBER FOOTWEAR IN HOLLAND.

A REPORT on the possibility of extending the trade in American overshoes in Holland, by the vice consul general at Rotterdam, in *Daily Consular and Trade Reports* of January 3, is as follows:

"In the matter of overshoes the population of Holland may be divided into three general classes—lower, middle, and upper. The lower class, using mainly sabots, would under no circumstances be users of overshoes, using their wooden shoes exclusively; with the middle class objections hard to overcome would also be met, as they prefer to wade through mud and water in their ordinary shoes and look down upon the use of any sort of protection as effeminate. It is, hence, to the upper classes that the dealer must look for his trade. These people will not only gladly use any article the value of which is demonstrated to them, but are ready and willing to pay for anything practical.

"The climate of the country is damp and rainy the year round, so that a sale of rubbers once started would not be confined to any particular season. American shapes would answer the purposes perfectly, because the purchasers would to a large extent be users of American shoes. To create a permanent market the goods offered should be of good quality, as the entire population is economical and will soon stop buying an article which does not last. There are some German rubbers on sale here now, but they are little known and little used, so that advertising would be necessary before any large permanent demand would be created for American rubbers."

NEW BALATA FACTORY IN NORWAY.

TOWARD the end of the past year a new manufacturing company was formed at Christiania, Norway, under the style Viking Rem-og Paknings-Fabrik, Aktienselskabet ("Viking" Belting and Packing Factory Co., Limited), with a capital fully paid of 275,000 kroner [=$73,700]. The intention was to begin operations during the past month. The board of directors elected consisted of Messrs. Worm Hirsh, civil engineer; Nicolay Leth, solicitor; and Emile Backe, mill owner. The managing directors appointed were Messrs. B. Chr. Jenssen, civil engineer, and Anthon Berg, former managing director of Aktienselskabet den Norske Rem-Fabrik, of Christiania. The latter for some time past have made a specialty of balata belting. The new company will make both balata and leather belting, and various packings. Their address is 16 Svingens gade, Christiania.

AUSTRIAN RUBBER MANUFACTURER HONORED.

Two Austrian gentlemen, well known to the German as well as the Austrian india-rubber industry, have received a high mark of distinction. Mr. Camillo Castiglioni, business manager of the Oesterreichisch-Amerikanischen Gummiwaren-Fabrik Actiengesellschaft (Vienna) and Mr. Wilhelm Reithoffer, one of the principal members of the firm of Josef Reithoffer's Söhne (Vienna) have received the title of Counselor of the Board of Trade. We congratulate both gentlemen on this honor, and we ourselves feel that the entire trade in Austria shares in the well-deserved distinction accorded them.—*Gummi-Zeitung.*

RUSSIA.

MR. B. WITTENBERG, general director of "Prowodnik" Company, of Riga, has received from the Czar of Russia the order of St. Anne, third class.

GERMANY.

EMIL ARNTZ is no longer proprietor of the business known formerly as Höxtersche Gummifabrik Emil Arntz, at Hoxter. The style is now Höxtersche Gummifaden-Fabrik Emil Arntz, and Richard Arntz, who formerly held power of attorney, is the proprietor.

NEW BRITISH TIRE COMPANY.

THE "K. T." New Pneumatic Tyre and Rubber Co., Limited, have been registered in London, with £160,000 [= $778,640] capital, to acquire and work the numerous patents which have been granted throughout the world in connection with the "K. T." pneumatic tire—an article now having an established position in the trade. The new company succeeds to the undertaking of the "K. T." Syndicate, Limited, registered April 20, 1905, and agreement with Edward Brice Ketten and others. There are agreements also for the sale of the German and Austrian-Hungarian rights, an option for the sale of the American rights, and a provisional sale of the rights for France.

THE EDITOR'S BOOK TABLE.

KOLONIAL-HANDELS-ADRESSBUCH 1910 (14. JAHRGANG). MIT Karten der Kolonien - - - Berlin: Kolonial- Wirtschlichten Komitee. [1910.] [Paper. 8vo. Pp. 371. Price 2.50 marks.]

THIS valuable yearly epitome of progress in German colonial development becomes more complete with each issue, both through the inclusion of new interests and the growth of each of the departments which have gone to make up the book from the beginning. It is practically a complete directory of the business firms in the colonial trade, and of the plantations in the colonies, not the least important of which are those devoted to india-rubber. For German East Africa alone no less than twenty-seven plantation companies are listed, devoted wholly or in part to rubber, and seventy-one individual planters. Rubber is being cultivated in many cases in connection with coffee, cacao, sisal, cotton, cocoanuts, palm nuts, kapok, pepper, and so on. There are similar lists, but fewer names of rubber planters, for Togo, Kamerun and other colonies, including even New Guinea. Transportation facilities are fully treated, and the maps are a useful feature of the book.

MALAISIE CAOUTCHOUC PLANTATIONS, SOCIETES FINANCIERES. Antwerp. Imprimerie J. E. Buschmann. 1909. [Paper. 8vo. Pp. 114.]

The readers of THE INDIA RUBBER WORLD are familiar with various directories and handbooks of rubber plantation companies operated in the Far East which have been brought out, particularly in England. Interest in such plantations, however, has by no means been confined to Great Britain. Investments in planting in the region referred to have been very large in Belgium and the Netherlands, not to mention other countries, and the brochure, the title of which is here quoted, printed in French, has been issued as a guide to continental investors in rubber plantations. While many of the companies here listed are registered in London, a considerable proportion of them have to do with plantations in other than British colonies. The general style of the book is the same as the English plantation directories which have been reviewed in THE INDIA RUBBER WORLD.

LE CAOUTCHOUC. HISTORIQUE-LATEX PROPRIETES-TRAITEments-Technologic Fabrication-Confection Vulcanisation-Gomes Analogues Essais. Par Amédée Fayol, Ingenieur civil, Ancien élève de l'École centrale Lyonnaise. Paris and Liége: Librairie Polytechnique Ch. Beranger. 1909. [Paper. 8vo. Pp. III + 138.]

As its title indicates, this is a summary of the rubber interest in general, intended apparently for purposes of general information rather than as a technical handbook, though it appears to be carefully drawn up and to be scientifically accurate. The author of the book has been mentioned several times in these pages as the translator of books on rubber of importance from other languages than French.

THE QUARTER CENTURY NUMBER OF *THE INDIA-RUBBER JOURNAL*. 1884-1909. A souvenir. London: Maclaren & Sons, Limited. [1909.] [Folio. Pp. 102. Price, *2s. 6d.*

OUR congratulations have been extended already to the *India-Rubber Journal* on the age and high standing which it has acquired, and they are repeated in respect of the handsome book which the managers have brought out in celebration of their quarter centenary. It is no less interesting than handsome, in its summary of progress of the rubber industry, particularly in Britain, since its first commencement. It is in fact a valuable handbook.

MISSOURI BOTANICAL GARDEN. TWENTIETH ANNUAL REport. [With Index to Volumes XI-XX.] St. Louis: The Board of trustees, 1909. [Cloth. 8vo. Pp. 223.]

ORGANIZATION GENERALE D'UNE PLANTATION D'*HEVEA*. By G. Vernet, Agricultural engineer chemist at the Pasteur Institute at Nhatrang [French Indo-China]. [Reprinted from *Journal d'Agriculture Tropicale*, June-September, 1909.] [Paper. 8vo. Pp. 11.]

Rubber Plantation Yields

SPACE cannot be afforded for all the statistics of production of the rubber producing plantations in the Far East, the returns from which are cabled to the outside world, in detail comparable with that noticeable in reporting railway earnings, for example, in the United States. It may be of interest, however, now and then, to glance at returns taken at random from the latest despatches, as has been done in the table which follows. The point to be made is that a steady increase in production is shown, and that at a rate which insures the permanent importance of Ceylon and the Federated Malay States in the production of rubber. The figures indicate weights in pounds. The word "Limited" is omitted from the legal title of each company named:

	1908.	1909.
Monerakelle Rubber Estates:		
Year ended June 30	1,088	2,395
Federated (Selangor) Rubber Co.:		
December	.....	10,521
Nine months, including December	41,480	71,638
Selangor Rubber Co.:		
December	.....	38,525
Year ended December 31	187,992	323,919
Lanadron Rubber Estates:		
December	16,100	24,420
Year ended December 31	181,156	249,247
Ledbury Rubber Estates:		
December	5,139	8,270
Year ended December 31	28,956	65,979
Perak Rubber Plantations:		
December	10,460	10,150
Nine months, including December	.....	86,565
Malacca Rubber Plantations:		
December	8,500	29,000
Year ended December 31	46,890	240,000
Sumatra Pará Rubber Plantations:		
December	5,940	6,830
Six months, including December	23,720	53,880
Labu (F. M. S.) Rubber Co.:		
December	.....	13,960
Year ending December 31	24,127	86,500
Mabira Forest (Uganda) Rubber Co.:		
November	5,753	9,200
Eleven months, including November	28,996	88,345
Sungei Solak Rubber Co.:		
Year ending December 31	nil	5,081
United Sumatra Rubber Estates:		
November	.....	2,011
Five months including November	1,877	9,459
Straits Settlements (Bertram) Rubber Co.:		
December	6,200	13,500
Nine months ended December 31	34,200	68,063
Sumatra-Deli Rubber Estates:		
November	.....	2,160
United Serdang (Sumatra) Rubber Plantations:		
Year ended August 31	3,976	17,373
Federated Malay States Rubber Co.:		
December	.....	26,550
Seven months ended December 31	.....	156,700
Vallambrosa Rubber Co.:		
Nine months ended December 31	201,973	280,902
Bukit Rajale Rubber Co.:		
December	.....	32,373
Nine months ending December 31	136,128	194,525
Sungei Kapar Rubber Co.:		
December	.....	18,500
Year ending December 31	.....	114,600
Damansara (Selangor) Rubber Co.:		
December	.....	23,500
Year ending December 31	124,846	203,007
Edinburgh Rubber Estate, Selangor:		
December	.....	3,450
Year ending December 31	.....	29,234
Eastern Produce and Estates Co.:		
Year ending December 31	53,369	79,000
Singapore Pará Rubber Estates:		
December	.....	5,000
Year ending December 31	.....	34,650
Kuala Lumpur Rubber Co.:		
December	.....	46,200
Six months ending December 31	.....	221,500
Batu Caves Rubber Co.:		
December	2,276	6,585
Year ending December 31	16,585	43,527
Seafield Rubber Co.:		
December	.....	7,081
Year ending December 31	.....	43,490
Anglo-Malay Rubber Co.:		
December	34,865	53,489
Year ending December 31	350,688	516,232
General Ceylon Rubber and Tea Estates:		
Year ended December 31	26,283	38,370
Golconda Malay Rubber Co.:		
Year ended December 31	35,102	95,443
Glendon Rubber Co.:		
Three months ended December 31	6,220	9,431
Shelford Rubber Estate:		
December	.....	3,600
Year ended December 31	.....	28,903
Ceylon Tea Plantations Co.:		
Year ended December 31	25,700	54,000
Pataling Rubber Estates Syndicate:		
December	12,174	21,950
Year ending December 31	80,922	151,904
Linggi Plantations:		
December	.....	59,000
Year ending December 31	284,873	527,000
Sungei Choh Rubber Estate Co.:		
Year ended December 31	2,258	10,200
Golden Hope Rubber Estate:		
December	1,636	5,462
Year ended December 31	15,660	51,400
Consolidated Malay Rubber Estates:		
December	.....	29,418
Year ended December 31	111,585	215,893
Cicely Rubber Estates Co.:		
December	4,213	8,928
Nine months ended December 31	33,026	60,235
Highlands and Lowlands Pará Rubber Co.:		
December	23,000	46,078
Year ended December 31	222,287	341,966
London Asiastic Rubber and Produce:		
December	4,376	10,076
Year ended December 31	34,549	76,202

FAR EASTERN PLANTATION NOTES.

THE directors of The Rubber Estates of Johore, Limited, announce the sale of 1,488 acres of their rubber plantation in the Malay peninsula, and 3,444 acres of adjoining forest, for £62,500 cash, to parties who intend increasing the planted area largely.

The directors of Sumatra-Deli Rubber Estates, Limited, for the year ended June 30, 1909, report a debit of profit and loss for two years of £16,541. The fact that about 28,000 pounds of rubber trade were obtained during the first eleven months of 1909, however, lend encouragement to the company, and through borrowing £6,000 at 5 per cent. the financial difficulties are believed to have tided over. The estates are largely planted up with "Rambong" (*Ficus elastica*), at distances now believed to be much too close, and it is proposed to thin out the trees.

The United Serding (Sumatra) Rubber Plantations, Limited, attribute a lower production for the year ended August 31, 1909, than was anticipated to the exceptionally dry weather which prevailed from March to August. The revenue from coffee and rubber, however, permitted the declaration of a 5 per cent. dividend.

An interesting "Manual of British North Borneo Companies" is compiled by Zorn and Leigh-Hunt, of London. The development of British North Borneo of late has been most marked, but in no respect more notably than in relation to rubber. Land has been granted already to ten subsidiary companies by the British North Borneo Co., and details are given in regard to these in addition to general information on the history and progress of Borneo.

The Stock Exchange Year Book, a long established directory of British financial concerns, for 1910, devotes no less than 28 pages to statistical information on rubber plantation companies, which the publishers refer to as "a fact which will show the up-to-date character and the absolute completeness of the book." The volume contains 2,408 pages and is sold at 31*s.* 6*d.* [= $7.66.]

TAPPING ON PLANTATION "RUBIO."

THE subscribers of The Tehuantepec Rubber Culture Co. (New York), received a circular letter some weeks ago with reference to a change in the method of inspection of plantation

"Rubio," the responses to which were largely in favor of the change. Under date of January 11 another circular was issued in which it was stated: "In accordance with the terms of our circular, we have, upon authority of our board of directors, employed Mr. [James C.] Harvey to proceed immediately to plantation 'Rubio' and carry out the tapping experiments contemplated. This work will continue during the months of January and February, and possibly the first two weeks in March, report of which will be made at the proper time."

RUBBER PLANTING DIVIDENDS.

AN interim dividend of 15 per cent. on the capital of *Bukit Rajah Rubber Co., Limited,* for the business year 1909, was payable on January 8. No dividend was paid the first year. The figures since have been:

For 1905	6%	For 1907	30%
For 1906	30%	For 1908	55%

Dividends paid for four full years by *Linggi Plantations, Limited,* have been: (1) 7 per cent. on the preference shares in each year; (2) dividends on the ordinary shares as follows:

For 1905	4%	For 1907	20%
For 1906	15%	For 1908	60%

Two interim dividends have been paid on account of the business year, aggregating 65 per cent.

The *Federated Selangor Rubber Co., Limited,* have paid interim dividends amounting to 30 per cent. on account of the year which ends on March 31, 1910. Previous dividends have been:

For 1907	8%	For 1909	35%
For 1908	nil		

Vallambrosa Rubber Co., Limited, announce an interim dividend of 66⅔ per cent. (less income tax) for the year ending March 31, 1910. Former dividends:

For 1906	55%	For 1908	80%
For 1907	55%		

The directors of *Pataling Rubber Estates Syndicate, Limited,* announce interim dividends amounting to 50 per cent. on their shares for the year ending December 31, 1909. Former dividends:

For 1905	20%	For 1907	35%
For 1906	40%	For 1908	45%

The interim dividend of *Cicely Rubber Estates Co., Limited*—the year ends March 31—is 25 per cent., but our report does not state for what class of shares. The capital is in £10,000 ordinary shares and £6,000 preference. The latter are entitled to a preferential dividend of 5 per cent. in each year and one-half the remaining divisible profits. Former dividends:

	Preferred.	Ordinary.
For 1905	5 %	10 %
For 1906	15 %	20 %
For 1907	37½%	42½%
For 1908	50 %	55 %

The directors of *Malacca Rubber Plantations, Limited,* sanctioned the payment of an interim dividend, for the year 1909, of 10 per cent. on preference and ordinary shares, which required £30,000 [= $145,995]. For the preceding year the disbursement was 7½ per cent. on the preference shares, of which the issue amounted to £115,000.

SOAP AND RUBBER.

THE important plantation enterprise, the Lanadron Rubber Estates, Limited, as is generally known, is an outgrowth of the cocoanut plantation in the Malay peninsula of the English corporation, A. & F. Pears, Limited, makers of Pears' soap, in which cocoanut oil is used. Their neighbors in Johore were successful in rubber planting, and the Messrs. Pears took up rubber, with the result that they have become important factors in the planting interest. At the recent annual meeting of A. & F. Pears, Limited, in London, the death was referred to of Mr. Andrew Pears, J. P., managing director. Mr. Francis Pears has given his personal attention to the rubber undertaking, and is the resident estates manager of the Lanadron company. Andrew Pears was a great-grandson of the founder of the soap firm. The capital of the latter, by the way, is £340,000 [= $1,654,610]. For the last sixteen years the £20,000 in preferred shares have earned 6 per cent. and the £320,000 in ordinary shares 10 per cent. dividends.

COTTON IN RUBBER GOODS.

IN a letter on the cotton situation by Dick Brothers & Co. (New York) published in the Memphis *Commercial-Appeal* the constantly increasing consumption of cotton for many purposes is treated in detail. The warning is given that the South must prepare to take care of even greater demands for consumption. An important point in the letter occurs in the closing paragraph: "Until the last twenty years cotton for centuries has sold at a higher average price than wool. We are not indulging in prophecy, but when one considers the countless uses to which cotton is put, and figures on what might happen owing to an accident curtailment of production, it is quite within the bounds of possibility for history to repeat itself."

It is estimated in the letter that the sale of cotton duck for use in rubber belting and all kinds of rubber hose amounts to 50,000,000 yards annually. They estimate the demand for cotton for use in automobiles at 325,000 bales annually, of which about 290,000 bales are required for the cotton duck basis for tires, the rest going largely for the manufacture of artificial leather cushions and seats. The use of cotton yarns or tape for insulation work is also referred to. A member of the trade tells the firm that the sales in the New York market alone amount to 400,000 pounds of cotton yarn weekly to the electrical industry.

AMERICAN PRODUCTION OF SULPHUR.

SOME figures which follow, which may prove of interest in some branches of the india-rubber industry, are derived from a statement of the mineral products of the United States for 10 years, prepared by the United States Geological Survey. The figures relate to tons of 2,000 pounds, and are for calendar years:

YEAR.	Sulphur.	Barytes (Crude).	Asbestos.
1899 ..... *tons*	4,840	41,894	681
1900	3,525	67,680	1,054
1901	*a*	49,070	747
1902	*a*	61,668	1,005
1903	*a*	50,397	887
1904	*a*	65,727	1,480
1905	181,677	48,235	3,109
1906	294,153	50,231	1,695
1907	293,106	89,621	653
1908	369,444	38,527	936

a—Not reported separately.

It will be noted that while the production of sulphur has increased steadily, there has been a falling off with respect to barytes, and no increase in the output of asbestos. Further statistics regarding sulphur will be found in THE INDIA RUBBER WORLD, September 1, 1909 (page 418).

OFFICIAL reports regarding the Congresso Commercial Industrial e Agricola to be held at Manàos, Brazil, in February next [see THE INDIA RUBBER WORLD, October 1, 1909—page 7], indicate that the proposal has met with encouraging responses from the various commercial associations whose co-operation has been invited, and that much interest has been expressed in other quarters.

EDWARD OLSEN, a director in A. H. Alden & Co., Limited, india-rubber merchants, London, died in that city on January 6.

News of the American Rubber Trade.

HODGMAN RUBBER CO.'S ANNUAL.

AT the annual meeting of shareholders of the Hodgman Rubber Co., held at their offices in New York on January 20, the following directors were elected for the year: G. B. Hodgman, F. A. Hodgman, S. Theodore Hodgman, Newton E. Stout, and Theodore M. Purdy. The board then elected officers as follows:

President—G. B. HODGMAN.
Vice President—F. A. HODGMAN.
Treasurer—S. THEODORE HODGMAN.
Secretary—A. W. WARREN.

MORGAN & WRIGHT—INCREASE OF CAPITAL.

MORGAN & WRIGHT, proprietors of the Detroit Rubber Works (Detroit, Michigan), and a subsidiary company of the Rubber Goods Manufacturing Co., have filed with the secretary of state of Michigan a certificate of increase of capital stock from $1,800,000 to $2,500,000. This increase has been called for on account of the large growth of the company's automobile tire business. The additional capital was subscribed for at par, and paid in cash by the old shareholders. It is understood that large additional buildings will be erected this year and the business otherwise extended.

CHANGE IN THE TRADE AT NEWARK.

THE plant of the Ennis Rubber Manufacturing Co., a corporation located at Newark, New Jersey, and engaged in making automobile tires and inner tubes, was sold at public auction by the receiver on January 17. The purchaser was Grant Lambright, superintendent of the works, with the support of some of the creditors of the company. The business will be continued under the style of the Newark Rubber Manufacturing Co., whose plans are not yet ready for the public, though it is understood that the orders on file alone assure an important volume of business.

A NEW MICHELIN MANAGER.

J. HAUVETTE-MICHELIN has been elected vice president and general manager of the Michelin Tire Co. (Milltown, New Jersey), following the retirement of James C. Matlock, reported recently in this journal. Mr. Hauvette-Michelin, whose headquarters will be at Milltown, is a nephew of Edouard Michelin, president of the company domiciled at Milltown, as well as the Michelin companies in France, England and Italy. The American company was incorporated March 12, 1907, under the laws of New Jersey.

AN AMERICAN CHEMIST HONORED.

THE Perkin medal, a gold decoration awarded annually "to the American chemist who has accomplished the most valuable work in applied chemistry during his career," was awarded in December to Dr. Edward G. Acheson, of Niagara Falls, New York, by unanimous vote of the Society of Chemical Industry, American Chemical Society, and the American Electro-Chemical Society. The presentation was made at the Chemical Club in New York, on the evening of January 21. Dr. Acheson is president of the International Graphite Co. and other important companies. Among his many scientific discoveries and inventions the most prominent, perhaps, is a deflocculated graphite, which may be suspended either in oil or water and used as a lubricant.

SALESMEN GUESTS OF PRESIDENT APSLEY.

THIRTY or more salesmen and employés of the Rubber Manufacturing and Distributing Co. (Chicago) were entertained at dinner at the Congress Hotel on the evening of January 3, by the president, the Hon. L. D. Apsley. At the beginning of the year preceding prizes were offered to the three salesmen with the largest record of business, of $200, $100, and $50 respectively. These prizes were awarded during the evening, besides which at the plate of each guest was an envelope containing a check in appreciation of the good work all had done during the year and for the interest they had taken in promoting the welfare of the company. During the evening Mr. Apsley congratulated the salesmen on their work and spoke at some length on the points which go to make up a good salesman. He suggested that they do not take all the glory, but concede some to the quality of the goods offered and the prompt manner in which orders are filled. Other speakers were W. E. Carver, treasurer of the company, and Mr. L. L. Murphy, sales manager, besides which each salesman was given an opportunity to express himself. Mr. Apsley had as a special guest Mr. Charles H. Crump, of Boston.

BORGFELDT & CO.'S NEW STORES.

THE formal opening of the new stores of George Borgfeldt & Co. (New York), the first occupancy of which was mentioned in the last INDIA RUBBER WORLD (page 147), took place on Monday, January 3. The new building, of steel and brick construction, fills eleven stories and basement, and has been designed to accommodate all the departments of the great Borgfeldt business, not the least of which is that of imported india-rubber goods. A booklet issued by the house to celebrate their change of location contains views of the five different premises occupied by them hitherto, beginning with the small building in Leonard street, back in 1881. The longest front of the new building as shown in the accompanying cut is in Sixteenth street; to the right is shown the front on Irving place.

TRADE NEWS NOTES.

THE Beebe-Elliott Co., manufacturers of the "Horseshoe" auto tire, at Racine Junction, Wisconsin, were damaged by fire on New Year's day, to the extent of $4,000, causing an interruption to business of only a few days.

Mr. Calvert B. Archer, president of the Archer Rubber Co. (Milford, Massachusetts) since their incorporation, early in 1907, has severed his connection with that concern, and, it is understood, will again become interested in the proofing trade somewhere else in the state.

An exhibition of aërial craft of all types is to be held in Boston during the week beginning February 23, under the sanction of the Aëro Club of New England and the Aëro Club of America. The exhibition will be held in the Mechanics' building. Charles J. Glidden is chairman of the advisory board for the exhibition.

THE NEW BORGFELDT STORES.

THE NEWEST RUBBER TIRE FACTORY.

THE McGraw Tire and Rubber Co. have removed their principal offices from Pittsburgh, Pennsylvania, to East Palestine, Ohio, where their factory is located. The incorporation of this company was reported in THE INDIA RUBBER WORLD May 1, 1909 (page 299). Since then the original name has undergone some change, accompanied by a reorganization of its *personnel*. Meanwhile there has been no interruption of the building up of a factory and a business in automobile tires. The line of tires made by this company is styled the "Imperial," the distinctive feature being in the tread, for which a special fabric is used. The officers of the company are E. C. McGraw, president; R. W. McGraw, vice-president; John S. Wilson, treasurer; and H. G. Morgan, secretary.

CONFERENCE OF BOSTON BELTING CO.'S AGENTS.

AT the invitation of the Boston Belting Co., their Western agents held a meeting in Boston on December 16-17, to discuss the introduction of some new lines of goods to be made in addition to their well-known manufactures and staples, and to arrange to further increase the large and constantly growing demand for their goods. The time throughout the two days was fully occupied in the inspection of an exhibition of the company's products and by a visit to the factories in Roxbury, including an inspection of the large new building recently completed for the manufacture of cotton fabric hose, braided hose, and other goods. Two banquets were tendered to the visitors by the Boston Belting Co., and there was a free and general discussion of present conditions regarding the mechanical rubber goods industry. The Boston Belting Co. have reason to feel gratified at the results of the meeting, and all of the company's guests expressed themselves as being highly pleased with what they saw and heard.

GOOD BUSINESS AT BRISTOL.

MR. LE BARON C. COLT, of the National India Rubber Co. (Bristol, Rhode Island), is quoted as saying that this has been the best winter for orders for the products of that company for three years. Lately 2,000 employés have been at work in the factory.

The shipments of rubber footwear from Bristol on January 3, over the New Haven railroad, amounted to 5,000 cases—reported to be the largest shipment ever made from there in one day.

CHANGES IN THE COTTON DUCK TRADE.

AMONG the various changes in the cotton goods district of New York one of special interest has been the withdrawal of the duck department of Catlin & Co., formerly under the charge of Mr. R. P. M. Eagles, who has associated himself with the Boston Yarn Co. The product of the Lowell Weaving Co. and the Passaic Cotton Mills will be sold by the new concern, as well as yarns and sheetings heretofore supplied the trade. Mr. J. A. Kurvy, also formerly with Catlin & Co., has allied himself with the new company.

FIRE HOSE PRICES.

THE Eureka Hose Manufacturing Co. (New York) recently sold 2,000 feet "Red Cross" fire hose to the city of Newburgh, New York, at the price of 90 cents per foot, coupled. An item in a local paper stating that the city had bought "Paragon" hose at 90 cents has been copied in newspapers throughout the country. The Eureka Hose Manufacturing Co. wish to say that "Paragon" hose is never sold at less than the standard price of $1 per foot.

CHANGE OF STYLE.

IT is announced that the business heretofore conducted by the Continental Rubber Co.—in Guayule rubber will be conducted hereafter by the Continental Rubber Co. of New York, at the same address—No. 111 Broadway—under the presidency of Edward B. Aldrich. J. A. Whitcomb has been elected vice-president and selling agent of the company last named.

CHICLE COMPANY DIVIDENDS.

THE initial quarterly dividend of the new chicle combine, Sen-Sen Chicle Co. (New York), of 1½ per cent., is payable on February 1.

The regular monthly dividend of 1 per cent. on the common stock of the American Chicle Co. is payable February 19.

"STAR" TIRES IN THE SOUTHERN TRADE.

THE Star Rubber Co. (Akron, Ohio) have established a branch at Nashville, Tennessee, for the sale of their "Star" automobile tires and tubes to the Southern trade. The location is at the corner of Third avenue and Commerce street, and the management is in the hands of Mr. W. F. Anderson. This gentleman has been connected with the automobile trade practically from the beginning, and for some time past has been the manager of the Rock City Auto Co., of Nashville, at the address here given. Mr. Anderson for the present will retain the management of the automobile company. [See THE INDIA RUBBER WORLD, January 1, 1910—page 139.]

TRADE NEWS NOTES.

THE Hood Rubber Co. have increased their preferred capital stock from $1,000,000 to $1,500,000, by the issue of 5,000 new shares which were offered to the shareholders at $125. The company's gross business is stated to exceed $6,500,000. Their goods are sold mostly in the United States, but the export trade is growing steadily.

The Dearborn Rubber Shoe Co., incorporated for $500,000, have become located at Nos. 153-159 Franklin street, Chicago. They will sell "Hood" and "Old Colony" rubber footwear, the business being under the direction of Mr. John G. McGaw.

A company incorporated recently as the American Rubber Co., with factory at Jersey City, New Jersey, and general offices at No. 149 Broadway, New York, without first learning that a company by the same name long had been engaged in the rubber footwear trade, has, in order to avoid confusion, changed its name to the Rubber Co. of America.

WHERE THE "IMPERIAL" TIRES ARE MADE.
[Factory of the McGraw Tire and Rubber Co., at East Palestine, Ohio.]

THE B. F. GOODRICH CO. IN BOSTON.

THE new home in Boston of the Goodrich company, on Boylston street, in the heart of the automobile trade in that city, is one of the best appointed to be found in the United States, and vies in its completeness with the New York establishment of the same company. [See THE INDIA RUBBER WORLD, November 1, 1909—page 55.] This building was entirely remodelled for the uses of the company, and although not entirely complete on January 1, Manager H. E. Limerick and his force took possession of it on that date. The building is six stories in height and used exclusively by the Goodrich Rubber Co., under which name the Goodrich trade is managed in New England. The street floor is used as a general salesroom. The second floor is occupied by the executive department. The other four floors are devoted to carrying an extensive line of rubber goods, including, in addition to tires and accessories, the other products of The B. F. Goodrich Co. (Akron, Ohio). The building is strikingly attractive from the outside, while the interior is in keeping with Goodrich quality and ability.

TRADE NEWS NOTES.

RAW PRODUCTS CO. (No. 121 Front street, New York) send out a comprehensive and useful chart of india-rubber stocks and prices for the past year covering all the leading markets.

A scribbling tablet, distributed by Mr. H. Weber, New York representative of J. Schnurmann (London), both looks well on a desk and is a convenient accessory.

Enterprise Rubber Co. (Boston) issued under date of January 1 a net price list of the brands of rubber footwear carried by them, in convenient form for reference by retailers.

Two arrests were made in Akron, Ohio, early in January, in respect of alleged frauds in weighing waste rubber—one of a dealer in such material and the other until recently an employé of a reclaiming company who made purchases from this company.

Mr. H. T. Dunn, president of The Fisk Rubber Co. (Chicopee Falls, Massachusetts), recently returned from a business trip to the west. While in San Francisco he gave a banquet to the distributors of Fisk tires on the Pacific coast.

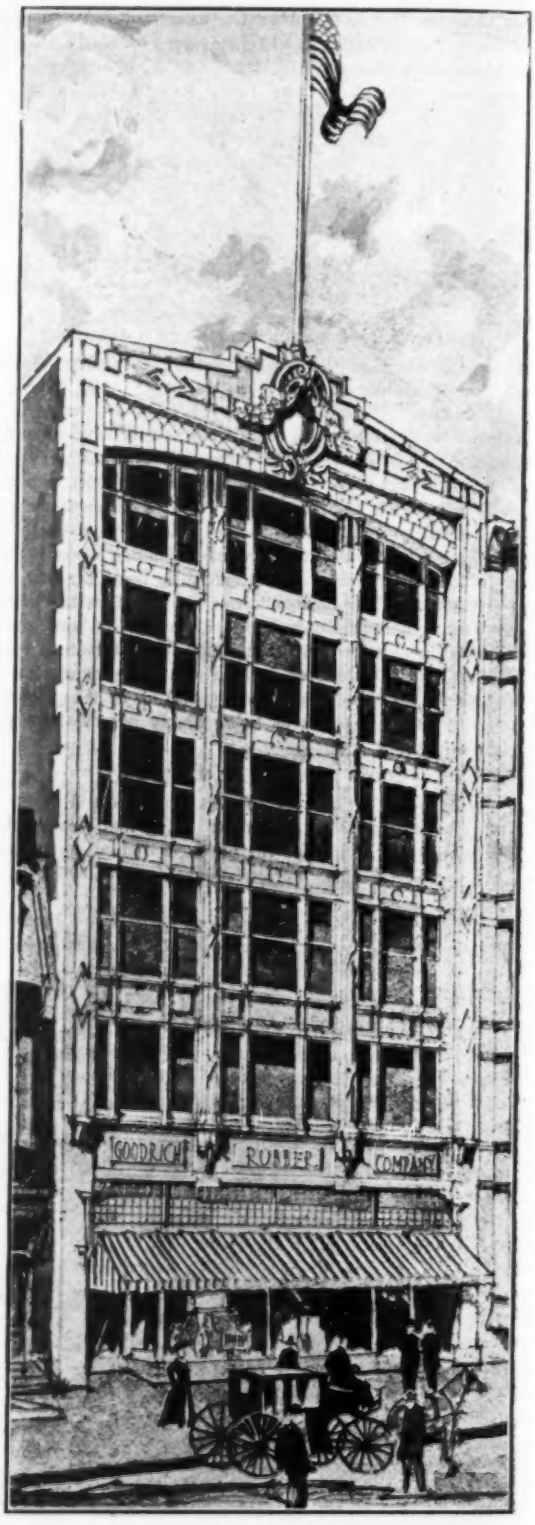
The directors of the Woonsocket Rubber Co. recently donated $5,000 of the corporation's funds to the building fund of the Young Men's Christian Association at Woonsocket, Rhode Island. The directors of the American Wringer Co. voted $2,000 for the same purpose. These gifts are credited locally to the influence of Mr. Walter S. Ballou, who is president of both the companies named.

The footwear factory of the Apsley Rubber Co. (Hudson, Massachusetts) was closed for repairs and inventory for a fort night at the end of January. The factory was closed for but one day at the Christmas holidays, instead of ten days, as usual.

George H. Rupert, doing business as George H. Rupert & Co., dealers in rubber goods and clothes wringers, at Nos. 54-56 Cornhill, Boston, has been declared a bankrupt upon a petition of his creditors.

The first importation of rubber by the Malaysian Rubber Co., with the exception of samples, reached New York on January 17, by the steamer *Prinz Friedrich Wilhelm*, from Bremen, at which port it had been transhipped from a steamer from Singapore. The shipment amounted to 15 cases, and was of the grade described on another page of this issue in the article "The New 'Dvera' Rubber."

The United States Treasury Department has issued an order relative to the classification of suspenders made of cotton or other vegetable fiber and india-rubber, or of which cotton or other vegetable fiber is the component of chief value, not embroidered by hand or machinery. It is advised that such suspenders are not dutiable at the rate of 60 per cent. *ad valorem* by virtue of the first proviso to paragraph 349 of the Tariff act of 1909, but are property dutiable under paragraph 330 of this act, at the rate of 45 per cent. *ad valorem*.



THE GOODRICH BOSTON STORE.
[New Headquarters for Tires in Boylston Street.]

UNITED STATES RUBBER CO.'S ISSUES.

TRANSACTIONS on the New York Stock Exchange for four weeks, ending January 22:

COMMON STOCK, $25,000,000.

[Less $1,344,000 in treasury of a subsidiary company.]
Last Dividend, April 30, 1900—1%.

Week January 1	Sales	5,400 shares	High	53½	Low	52⅜
Week January 8	Sales	8,750 shares	High	52½	Low	50
Week January 15	Sales	11,000 shares	High	51⅝	Low	44¾
Week January 22	Sales	10,460 shares	High	47½	Low	43⅜

For the year—High, 52½, Jan. 3; Low, 43⅜, Jan. 20.
Last Year—High, 57⅜; Low, 27.

FIRST PREFERRED STOCK, $36,263,000.

Last Dividend, Jan. 31, 1909—2%.

Week January 1	Sales	2,150 shares	High	117	Low	116½
Week January 8	Sales	2,380 shares	High	116⅜	Low	115⅝
Week January 15	Sales	6,050 shares	High	116½	Low	110½
Week January 22	Sales	11,875 shares	High	113½	Low	111¼

For the year—High, 116½, Jan. 3; Low, 110½, Jan. 15.
Last year—High, 123½; Low, 98.

SECOND PREFERRED STOCK, $9,965,000.

Last Dividend, Jan. 31, 1909—1½%.

Week January 1	Sales	500 shares	High	84¾	Low	84
Week January 8	Sales	400 shares	High	84	Low	82½
Week January 15	Sales	500 shares	High	82⅝	Low	82½
Week January 22	Sales	400 shares	High	80¾	Low	78⅞

For the year—High, 84, Jan. 3; Low, 78⅛, Jan. 20.
Last year—High, 89½; Low, 67½.

SIX PER CENT. CERTIFICATES, $20,000,000.

Week January 1	Sales	41 certs	High	104½	Low	104⅛
Week January 8	Sales	75 shares	High	104½	Low	104
Week January 15	Sales	170 shares	High	104½	Low	103¾
Week January 22	Sales	132 shares	High	104	Low	103⅛

COMMON STOCK.

	1904.	1905.	1906.	1907.	1908.	1909.
Shares sold .	285,819	723,665	607,800	175,277	191,200	517,411
Highest price	34½	58½	59½	52½	37⅝	57¾
Lowest price.	10½	33¾	38	13½	17½	27

Highest, 1909, August 19; Lowest, February 24; Closing, 53.

FIRST PREFERRED STOCK.

	1904.	1905.	1906.	1907.	1908.	1909.
Shares sold..	182,443	200,497	123,760	120,108	94,400	199,512
Highest price.	100	118¾	115	109⅞	108	123½
Lowest price.	41	98⅜	104¾	61¾	76	98

Highest, 1909, August 24; Lowest, January 29; Closing, 116½.

SECOND PREFERRED STOCK.

	1905.	1906.	1907.	1908.	1909.
Shares sold	21,550	59,845	31,203	21,131	61,790
Highest price	83¾	87½	78⅛	73½	89½
Lowest price	75	75	39	42	67½

Highest, 1909, August 23; Lowest, February 25; Closing 84¾.

UNITED STATES RUBBER AND SUBSIDIARY COMPANIES.

THE directors of the United States Rubber Co., on January 6, declared from their net profits the regular quarter dividends of 2 per cent. on the first preferred stock, and 1½ per cent. on the second preferred stock, payable January 31 to holders of record January 15.

The merger of the Revere Rubber Co. (Boston) with the Rubber Goods Manufacturing Co., the control of which is held by the United States Rubber Co., was referred to in the last INDIA RUBBER WORLD. The plans then outlined have since been consummated. On January 5, Elisha S. Williams, treasurer and general manager of the Revere Rubber Co., and grandnephew of the late Hon. Elisha S. Converse, founder of the Boston Rubber Shoe Co., was elected president of the Rubber Goods Manufacturing Co., in place of John J. Watson, Jr., resigned. Mr. Watson retains the position of treasurer of the United States Rubber Co., and president of the General Rubber Co., a subsidiary company. Following the death of Charles H. Dale, president of the Rubber Goods Manufacturing Co., Mr. Watson was elected to fill the vacancy. Mr. Williams has taken up his residence in New York, with headquarters at No. 42 Broadway, the general offices of the United States Rubber Co. At present he is on a tour of the factories which are to be under his control under the new règime.

At the recent annual meeting of the Revere Co. (Boston), the following new directors were elected, all representing the United States Rubber Co. interests: Colonel Samuel Pomeroy Colt, James Bishop Ford, Lester Leland, Colonel Harry E. Converse, and Homer E. Sawyer. Costello C. Converse was re-elected president and Elisha S. Williams, treasurer.

In connection with the listing on the New York Stock Exchange of its registered issue of securities, the officials of the United States Rubber Co. advised the authorities of the Exchange that during eight months, ending November 30 last, their net sales amounted to $22,127,969; operating profits, $3,140,242; other income, including dividends received on stock of Rubber Goods Manufacturing Co., $923,356; total income, $4,062,398. The surplus increased during the period, after payment of interest and dividends, $1,074,499.

Colonel Samuel Pomeroy Colt, president of the United States Rubber Co., was recently in Montreal looking after the affairs of the Canadian Consolidated Rubber Co. Limited, in which the United States Rubber Co. now hold an important interest. He was entertained formally by Mr. D. Lorne McGibbon, president of the Canadian Consolidated company. In 1908 the latter company earned 18 per cent. on its common stock, and it is gossip that the figures for 1909 will show earnings of at least 25 per. cent.

NEW INCORPORATIONS.

UTICA Rubber Works, October 28, 1909, under the laws of New York; capital $75,000. To succeed the business known hitherto as Goodyear Rubber House, No. 133 Genesee street, Utica, New York. The incorporation is a steap toward the extension of a business of ten years' standing. Mr. L. H. Wood, the proprietor of the business, is president of the new company, and J. A. Jenkens and M. E. Jenkens, who have been employés of the house, will be respectively vice president and treasurer. These and Bradley Fuller, an attorney, constitute the board of directors. L. E. Wood is secretary. The company carry stocks of mechanical goods, tires, rubber footwear, waterproof clothing and druggists' sundries, maintaining the old claim of the house that "If it's made of rubber, We've got it."

Springfield Rubber Co., January 8, 1910, under the laws of Massachusetts; capital $25,000. Incorporators: Alec. J. Mayberry, Orvil W. Smith, and William F. Nye; the location of the business is Springfield, Massachusetts. The company will do a jobbing business in rubber footwear, handling the "Boston," "Bay State," "Woonsocket," and "Rhode Island" brands. Springfield has been selected as being the natural center for an important territory for the rubber footwear trade. The company are occupying temporarily a small office and salesroom at No. 180 Dwight street, but are negotiating for larger permanent quarters.

The Duplex Rubber Co., December 14, 1909, under the laws of Colorado; capital, $250,000. Incorporators: Jacob Kussart, D. P. Fagerstrom and S. A. Shawoer. Location of the principal office, Greeley, Colorado.

Bridge Web Tire Co., was incorporated originally on February 8, 1900, under the laws of Arizona. This corporation will be succeeded by the new one under the laws of Illinois.

TRADE NEWS NOTES.

THE 7 per cent. cumulative preference dividends of the Intercontinental Rubber Co. were allowed to accumulate for awhile, due to the building up of a good cash surplus. The payment of dividends has now been resumed, a dividend of 7 per cent. being paid on January 10 to holders of record, January 8 on the $4,200,000 of preferred stock outstanding.

Mr. Aubrey Love, who has been connected with the rubber industry in Trenton for some fifteen years, has joined Mr. Welling G. Sickel, whose connection with the Hewitt rubber interest is mentioned elsewhere in this paper. Mr. Love's position will be that of general office manager at Mr. Sickel's office in New York.

A SUCCESSFUL RUBBER MAN.

THE recent change of business connections by Mr. Welling G. Sickel, of Trenton, New Jersey, was a piece of news of no little interest to the trade that appeared in THE INDIA RUBBER WORLD at the time of its occurrence. The plans made for presenting a portrait of Mr. Sickel at the time "gang aglee," but the picture will prove no less interesting at this time.

Welling G. Sickel was born at Trenton on November 15, 1858. He received his education at the Trenton Academy, a school that has turned out many boys who subsequently showed great worth. After leaving the academy, Mr. Sickel took a course at the business college of Rider & Allen, and from there went to the employ of the Mercer Pottery Co., of Trenton. At the end of two years, spent in gaining practical knowledge of the potter's art, Mr. Sickel went on the road for the pottery company as their western representative. He remained about six years with this concern, and in 1885 organized the United Rubber Co. at Trenton, which subsequently built up a very large business in railway supplies.

In 1897 Mr. Sickel was elected mayor of the City of Trenton, receiving the largest majority ever given a candidate for that office, but declined a renomination. During his administration

WELLING G. SICKEL.

many important improvements were effected, and the foundations laid for many lasting monuments to his untiring activity for public improvements and the general welfare of the people. The Trenton Art School (now one of the foremost of its kind in the country) was launched through the efforts of Mr. Sickel. Trenton's Free Public Library was urged by Mr. Sickel in every message to the city council, and he appointed committees that afterward settled down to foundation work.

Mr. Sickel has visited practically every important city on this continent, and has also traveled extensively in Europe. Mr. Sickel has always been a lover of clean sports, and was never so elated as when some favorite horse of his passed under the wire a winner. He closed out his fine stable about a year ago, including "The Jap," one of the fastest horses on the Eastern circuit in 1908. This also included his handsome tally-ho and equipment.

The luxurious quarters formerly occupied by Mr. Sickel's horses and equipment have now been turned into a garage and equipped with a complete line of modern machinery, capable of handling any part of the several automobiles owned by him. Since becoming an automobile enthusiast, Mr. Sickel has built a 25 HP. runabout in his own shop, that is conceded to be fully equal to any of the well-known makes on the market for style, durability and speed.

In 1898 the United Rubber Co. purchased the plant of the Globe Rubber Co., then owned by the late Samuel K. Wilson, one of the pioneers of the rubber industry of Trenton, and the two companies were amalgamated under the corporate title of United and Globe Rubber Manufacturing Cos.

Mr. Sickel was for some years vice president of the United and Globe. In November last he, along with United States Senator Elkins and Martin Maloney, the gas magnate of Philadelphia, disposed of his holdings in the United and Globe, and all three withdrew from the company. The price paid for this stock is said to have been at least $400 per share. Within a few days afterward. Mr. Sickel became associated with the Hewitt interests, with offices in the Trinity building, New York. These interests comprise the Hewitt Rubber Co., with a factory at Buffalo, New York; Featherstone Foundry and Machine Co., at Chicago; Hewitt Supply Co., at Chicago, with fourteen plants in different States; Magnus Metal Co., and National Brake Shoe Co., with works at Depew and Chicago. Mr. Sickel will have charge of the sales of this important aggregation of companies with headquarters at No. 111 Broadway, New York.

A DINNER TO LOZIER MOTOR CO. OFFICIALS.

AN interesting incident in the automobile trade was a dinner given by the Thermoid Rubber Co. to the officials of The Lozier Motor Co., on the evening of December 30, at the Royalton, in New York. Among the guests were the vice-president of the Lozier company, Mr. F. C. Chandler; Mr. Arthur F. Way, a brother-in-law of President H. A. Lozier; Mr. A. J. Diefenderfer, head salesman of the New York retail branch, and Mr. C. A. Emise. Advantage was taken of the occasion for the presentation to the Lozier officials of a bronze tablet in *bas relief*, showing the two winning Lozier cars on the home stretch, and a very beautiful souvenir. The tablet was framed in crimson plush and mounted with a silver plate appropriately inscribed. The speech of presentation was made by the editor of THE INDIA RUBBER WORLD. Mr. J. O. Stokes, president of the Thermoid Rubber Co., acted as toastmaster, and proved a courteous, entertaining and graceful host. The menu, as follows, was a credit to The Royalton's proprietor, Mr. Merrill:

Bronx cocktail.

Stuffed celery.
Cape Cod cocktail.
Salted almonds. Celery. Queen olives.
Haut Sauterne.
Lobster. Newburg a la Thermoid.
Fresh mushrooms. Sous Cloche.
Breast of spring turkey, grilled and larded,
Potatoes au gratin. French string beans.
Ruinart Brut.
Hearts of lettuce, with Roquefort cheese dressing.
Ice cream Lozier (International)
Gateau Assortiz.
Cigars. Café Noir. Cordials.

TRADE NEWS NOTES.

THE LaCrosse Rubber Mills Co. (LaCrosse, Wisconsin), filed with the Secretary of State for Wisconsin on January 21, a certificate of increase of capital stock from $200,000 to $400,000.

At the annual meeting of the Republic Co. (Youngstown, Ohio), early in the past month, an appropriation of $200,000 was made to build additions to the plant. Warner Arms was re-elected president and J. F. McGuire general manager.

Following the annual meeting of the shareholders of the Peru-Pará Rubber Co., held in Chicago, the directors chosen elected officers as follows: Dr. B. F. Baker, president; William Schoen, secretary; and F. N. Ziegler, treasurer. These gentlemen are all residents of Milwaukee, Wisconsin, to which city the directors at a meeting on January 1 voted to remove the general offices. The company hold, under concession, an important extent of rubber area in Peru.

NEW JERSEY CORPORATIONS SUSPENDED.

THE governor of New Jersey in a proclamation dated January 4 announced the suspension from the list of corporations formed under the laws of that State, on account of the non-payment of corporation taxes for 1907, of 1,272 corporations. Included are the following related to the rubber interest, but the most of which had not been operated to an important extent, if at all. Some of the other companies named have been reorganized and now operate under other titles:

Consumers' Tire and Rubber Co.; incorporated February 24, 1906; capital, $200.000.

DeVoll Tire Co.; incorporated August 6, 1906; capital, $250,000. Charles H. DeVoll, principal incorporator.

East Burlington Rubber Co., East Burlington; incorporated October 17, 1903; capital, $100,000. Formed to operate the plant of the New Century Rubber Co., reclaimers, then in liquidation. Financial troubles began in 1905 and the company ceased operations.

Farrier Hoof Pad Co., Trenton; organized in the fall of 1902 to make a hoof pad patented by Albert E. Wheatcroft. A plant was established in the works of a rubber company, but financial troubles brought the business to an end.

Grieb Rubber Co., Trenton; incorporated June 11, 1899; capital, $100,000. Reorganization of the Grieb Rubber Co., not incorporated, which was formerly the Mundell Rubber Co., of Trenton. Merged September 11, 1906, with the Ajax-Standard Rubber Co., of New York, under the name Ajax-Grieb Rubber Co., incorporated with $400,000 capital, and still in operation, now with $1,000,000 capital.

Metropolitan Rubber Co., Trenton; incorporated April 21, 1906; capital, $2,500.

New York Broadway Rubber Tire Co.; incorporated November 7, 1901; capital, $10,000. To distribute in the New York district the tires of the Goodyear Tire and Rubber Co. Succeeded in May, 1907, by Martin-Evans Co., a New York corporation, headed by Delmar D. Martin, who was manager of the company first named.

Perfection Rubber Co.; operated at one time a plant for molded goods on Paul avenue, Trenton.

Pneumatic Tire Shield Co.; incorporated February 27, 1906; capital, $200,000. To make a protective shield of steel for tires.

Riverside Rubber Co. The company was established at Belleville, N. J., by James Hardman, Jr., in 1878, and incorporated in 1890. The business was reorganized and passed into the hands of the Hardman Rubber Co., incorporated at the beginning of 1901.

Standard Rubber Co., Trenton; incorporated September 2, 1905; capital, $50,000. To manufacture mechanical goods, but engaged mainly in selling. A receiver was appointed early in 1907.

Standard Rubber Manufacturing and Supply Co., Trenton; incorporated in January, 1907; capital, $100,000. To succeed to the business of the Standard Rubber Co., in the manufacture of specialties.

Victor Auto Tire Repair Co., Passaic; incorporated October 18, 1906; capital, $50,000. To make an "unpuncturable" felt tread inner tube. Name changed in June, 1907, to Victor Auto Tire and Tube Co.

Watkinson Rubber Shoe Co., Trenton; incorporated June 15, 1904, by George Watkinson; capital, $50,000. Manufacturing arrangements were made with a mechanical rubber factory, but Mr. Watkinson later entered another branch of the rubber business.

The list includes also a number of companies whose titles indicate that they were designed to operate in the automobile field, but none of them have made an impression in that trade.

CALENDARS FOR 1910.

THE Western Rubber Co. (Goshen, Indiana), have favored their patrons with an artistic calendar which carries a reproduction by color photography (11" x 16") from an original painting by Jean Beauduin, "At the Close of Day." It will be a fitting ornament for any office.

The Rubber Products Co. (Barberton, Ohio), have chosen for the ornamentation of their 1910 calendar a reproduction (10½" x 16") of Philip Boileau's painting "At the Play," showing two sisters seated in a theater box.

J. H. Stedman & Co., Inc. (Boston), for the fourth year, ornament their calendar with a picture of the "old mill series," all being different. For this year the picture is the "Old Grist Mill," at Byfield, Massachusetts.

The Stockton Rubber Co. (Stockton, New Jersey), send out a useful calendar with a tear-off leaf for each month, the figures being unusually large.

The S. P. Wetherill Co. (Philadelphia), issue a calendar and memorandum pad, in which there is a leaflet for each week.

Arkay Rubber Co. (New York), distribute a tasteful convenient size desk calendar ornamented with the face of a woman.

The New Jersey Rubber Co. (Lambertville, New Jersey), are again sending out "The Handy" memorandum desk calendar.

John Royle & Sons (Paterson, New Jersey), are distributing their vest pocket diary and memorandum book, with sectional maps of the United States and Canada, Central and South America, and China and Japan, with useful tables for reference.

Eureka Fire Hose Manufacturing Co. (New York), distribute a large and handsome calendar, with illustrations of their products and a tear-off leaf for each month.

Boston Belting Co. (Boston), send a handsome and convenient leather bound desk calendar with one card for each month, of a style with which their friends have been familiar for many years.

The artistic feature of the 1910 calendar of The Adamson Machine Co. (Akron, Ohio), is a reproduction (11" x 15") of Thomas Moran's landscape, "The Edge of the Wood."

Lebanon Mill Co., makers of knitted fabrics and underwear (Pawtucket, Rhode Island), send out a "happiness and prosperity" calendar embellished with a pleasing feminine portrait in water colors.

The Stamford Rubber Supply Co. (Stamford, Connecticut), again remember their friends with a serviceable calendar for the year with a tear-off leaf for every day with unusually large figures.

The Dunlop Rubber Co., of Australia, Limited, send out from Melbourne one of the most attractive calendars of the season. It is on a large scale, embellished with an attractive feminine face, and among other points of distinctiveness may be mentioned the dark brown paper used.

The Indiana Rubber and Insulated Wire Co. (Jonesboro, Indiana,) send out one of the largest calendars yet received. The tear-off leaf for each month is 15 x 20 inches, permitting the use of large figures. The illustration is a fanciful rubber forest scene on the Amazon River.

Elmer E. Bast, dealer in mechanical rubber goods, No. 161 East Lake street, Chicago, distributes a tasteful little calendar in which is a picture entitled "In Old Kentucky," from a painting by Carl Kahler, showing a Kentucky thoroughbred trotting up at the call of his mistress.

One of the handsomest calendars for the new year and one appropriate particularly for an engineering office is a large one issued by Hazard Manufacturing Co. (Wilkes-Barre, Pennsylvania), manufacturers of insulated wire and wire rope.

"The Firestone Trio" is the title of a handsome art panel calendar which is being sent to the trade by the Firestone Tire and Rubber Co. (Akron, Ohio). It is 16½ x 34½ inches in size, lithographed in twelve colors and has a large calendar pad, making it especially suitable for garage, sales room and office use.

TO SELL "DIAMOND" FOOTWEAR.

MR. E. H. CUTLER, who has been appointed selling agent for the footwear production of The Diamond Rubber Co. (Akron, Ohio), is one of the most experienced and most widely known salesman of rubber footwear in the country. The Diamond Rubber Co. will make two grades, the first branded with the name of the company, and the second "Python Rubber Co." The Diamond rubber shoe factory is referred to as having a capacity of 20,000 pairs daily.

THE LATE SAMUEL F. RANDOLPH.

SAMUEL F. RANDOLPH, who died at his home in New York city on January 9, of heart disease, was for many years widely known in the rubber goods trade, particularly in the district of which New York is the center. Mr. Randolph was born in New York and was in his sixty-sixth year. Mr. Randolph was hardly grown before he enlisted in the army in the period of the civil war. At the conclusion of his military service he entered the hardware trade, and was connected for some twenty-five years with the New York firm of Durrie & Rusher.

Later he became associated with the Stokes interests of Trenton in the rubber goods trade, and for a number of years was at

THE LATE SAMUEL F. RANDOLPH.

the head of selling agencies in New York for the disposal of their products. One of these agencies, with wholesale and retail stores, was conducted under the style of the Commonwealth Rubber Co., of which Mr. Randolph was president or treasurer or both from October, 1890, for something more than six years. Mr. Randolph reorganized his connection then, and the business was known for some years as the World Manufacturing Co. This house took on the sale of bicycles as well as rubber goods, and ultimately Mr. Randolph became identified with the automobile trade.

In 1905 he became superintendent, and later general manager, of the Metropolitan Garage, at Broadway and West Seventy-seventh street, New York, and by his tireless energy and genial nature built up a most successful garage business.

Mr. Randolph was of a very cheerful and optimistic disposition, and leaves a host of friends. In his latter years he sustained a great bereavement in the death of his son, Samuel F. Randolph, Jr., which was reported in THE INDIA RUBBER WORLD June 1, 1908 (page 313.) Mr. Randolph was a Royal Arch Mason and a member of the Hardware Club.

OBITUARY NOTES.

JOSEPH MASON MAREAN, who died suddenly of heart failure at Cambridge, Massachusetts, on December 20, was born at Van Buren, Arkansas, September 2, 1849, of New England parentage. He was educated at Worcester, Massachusetts. In 1876 he married Emma, daughter of Mr. and Mrs. Henry Endicott, of Cambridge, and removed to Chicago, where he engaged in the woolen trade. Returning to Boston in 1890, he was connected successively with the wholesale shoe firms of Haynes, Sparrell & Co., and the Rufus Warren Boot and Shoe Co., of that city. About two years ago Mr. Marean organized the Pilgrim Rubber Co., at No. 566 Atlantic avenue, Boston, of which he was president at the time of his death, and also president of the Barre Shoe Co., of Burlington, Vermont. Mrs. Marean survives, with four sons and a daughter. One of the sons is Parker Marean, superintendent of the B. & R. Rubber Co., at North Brookfield, Mass. The interment was at Mount Auburn cemetery, Cambridge.

* * *

WILLIAM T. JENNEY, at one time connected with the Enterprise Rubber Co. (Boston), died on January 8 at his home in Medford, Massachusetts. This business was founded in the summer of 1891 as a co-partnership, the leading member of which was William E. Barker, later president of the incorporated Enterprise Rubber Co., and now at the general offices of the United States Rubber Co. Mr. Jenney joined the business as a partner in June, 1892, and continued for six years, after which he entered another line of business.

ADDITIONAL TRADE NOTES.

THE monthly journal *Gummi-Markt*, published for two or three years past in Dresden, has changed owners, and is now under the editorial direction of Dr. Werner Esch, a widely recognized specialist in rubber, who may be expected to be a liberal contributor to the columns of the paper. The headquarters of the paper are now in Hamburg, of which city Dr. Esch is a resident.

An order issued by the United States treasury department provides for a drawback on automobile tires manufactured for export by The B. F. Goodrich Co. (Akron, Ohio), in respect of any imported leather butts and metal rivets or studs used therein.

NEW TAXICAB COMPANIES.

THE Public Automobile Service Corporation was registered in New Jersey on January 8, with an authorized capital of $2,000,000, half of which has been paid in, to operate a taxicab service "wheresoever it is required." William R. Buchler, No. 150 Nassau street, New York, is named as the owner of all the common stock; the other incorporators are Charles E. Thorne and Ernest D. Kahn, also of New York.

The Taxi-Service Co., of Baltimore, filed articles of incorporation in New Jersey on December 29, with $500,000 capital authorized. Incorporators: Frank C. McKinney, James R. Mapletoft, and Raymond E. Taylor, all of No. 525 Main street, East Orange, New Jersey.

PERSONAL MENTION.

MR. FRANCIS LYNDE STETSON, who was elected president of the Bar Association of New York at the annual meeting on January 11, has been a director of the United States Rubber Co. since 1902, besides which he is a director in a number of important banks and railway companies. He is a member of the New York law firm of Stetson, Jennings & Russell.

A recent visitor to the offices of THE INDIA RUBBER WORLD was Mr. Albert Waterhouse, of The Waterhouse Co., Honolulu, who, with the other members of the firm, is interested to an important extent in rubber plantations, not only in Hawaii, but in the Malay peninsula. Mr. Waterhouse was on his way home from Singapore, via London and New York.

Mr. Henry A. Reed, president of the Bishop Gutta Percha Co., New York, started on the 20th ultimo for a three months' sojourn in Florida.

Review of the Crude Rubber Market.

THE essential feature of the month just past is the advance in prices above those quoted by this paper on January 1. The advance appears with regard to every grade, and in every market.

Following are the quotations at New York for Pará grades, one year ago, one month ago, and January 31, the current date:

PARA.	Feb. 1, '09.	Jan. 1, '10.	Jan. 31.
Islands, fine, new	114@115	163@164	179@180
Islands, fine, old	none here	none here	none here
Upriver, fine, new	121@122	178@180	187@188
Upriver, fine, old	123@124	none here	189@190
Islands, coarse, new	56@ 57	...@ 70	75@ 76
Islands, coarse, old	none here	none here	none here
Upriver, coarse, new	92@ 93	111@112	117@118
Upriver, coarse, old	none here	none here	none here
Cameta	62@ 63	79@ 80	84@ 85
Caucho (Peruvian), ball	83@ 84	101@102	110@111
Caucho (Peruvian), sheet	72@ 73	...@ 85	89@ 90
Ceylon, fine, sheet	128@129	179@180	200@201
Ceylon, crepe	.....	181@182	208@209
AFRICAN.			
Lopori, ball, prime	109@110	133@134	140@141
Aruwimi	.....	116@117	120@121
Upper Congo, ball, red	.....	121@122	125@126
Sierra Leone, 1st quality	96@ 97	...@117	123@124
Massai, red	96@ 97	...@117	124@125
Soudan niggers	82@ 83	...@106	107@108
Cameroon, ball	60@ 61	77@ 78	79@ 80
Benguela	61@ 62	..@ 74	75@ 76
Madagascar, pinky	91@ 92	98@ 99	99@100
Accra flake	20@ 21	22@ 23	25@ 26
CENTRALS.			
Esmeralda, sausage	80@ 81	..@100	104@105
Guayaquil, strip	69@ 70	84@ 85	87@ 88
Nicaragua, scrap	78@ 80	97@ 98	99@100
Mexican, scrap	79@ 80	96@ 97	100@101
Mexican, slab	56@ 57	82@ 83	78@ 80
Mangabeira, sheet	53@ 54	67@ 72	none here
Guayule	30@ 31	60@ 63	64@ 65
EAST INDIAN.			
Assam	92@ 93	94@ 95	100@101
Pontianak	.....	6@6½	...@6½
Borneo	35@ 45	55@ 64	57@ 67

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine	9$200	Upriver, fine	10$200
Islands, coarse	3$400	Upriver, coarse	5$600
		Exchange	15 3/16*d.*

Latest Manáos advices:

Upriver, fine	10$450	Exchange	15 3/16 *d.*
Upriver, coarse	5$950		

Statistics of Para Rubber (Excluding Caucho).

	NEW YORK. Fine and Medium.	Coarse.		Total 1909.	Total 1908.	Total 1907.
Stocks, November 30..*tons*	181	37	=	218	248	135
Arrivals, December	2004	671	=	2675	2299	1078
Aggregating	2185	708	=	2893	2547	1213
Deliveries, December	2011	675	=	2686	2303	1099
Stocks, December 31	174	33	=	207	244	114

	PARA. 1909.	1908.	1907.	ENGLAND. 1909.	1908.	1907.
Stocks, November 30..*tons*	1385	475	140	500	136	640
Arrivals, December	3140	3015	2285	960	1439	1015
Aggregating	4525	3490	2425	1460	1575	1655
Deliveries, December	4375	2795	2177	1075	800	825
Stocks, December 31	150	695	248	385	775	830

	1909.	1908.	1907.
World's visible supply, December 31..*tons*	2,358	2,314	2,484
Pará receipts, July 1 to December 31	14,970	14,075	12,900
Pará receipts of Caucho, same dates	1,840	1,665	1,340

CHART SHOWING FLUCTUATIONS IN ISLANDS SPOT FINE PARA RUBBER AT NEW YORK, FOR THREE YEARS.
[Copyright, 1910, by Henry A. Gould.]

Liverpool.

WILLIAM WRIGHT & Co. [January 1]:

Fine Pará.—The market has been active but subject to sudden fluctuations; the tendency, however, has been to a lower level of values. Prices for December at one time declined to 7*s.* 3½*d.* [=$1.76] and the more distant positions to 7*s.* 2½*d.*, but have since reacted and closed spots 7*s.* 7*d.*, January 7*s.* 6½*d.*, January to April 7*s.* 5*d.*; there has been steady buying for these distant positions at market rates. America continues to take large supplies from Brazil, as well as buying in this market; as shipments to Europe are comparatively small, any trade orders would naturally stiffen prices. Receipts continue plentiful, but so far this does not seem to affect prices to any great extent.

WILLIAM WRIGHT & Co. report [January 7]:

Fine Pará.—An undreamt record in price has to be recorded for 1909, 9*s.* 2*d.* [=$2.23] being paid for hard fine Pará in September last, and the year closed with prices 2*s.* 5*d.* per pound higher than they were in January a year ago, with every indication of a continuance of a very high level of values. January opened with price of hard fine 5*s.* 1½*d.*, and gradually advanced to 5*s.* 3*d.* in March, and, with practically little variation from this, advanced in June to 6*s.*; July opened at 6*s.* 4½*d.*, and during the month there was a record jump of over 2*s.* per pound, 8*s.* 6*d.* being paid; in August a sharp reaction to 7*s.* 11*d.*, followed by an extraordinary advance in September to 9*s.* 2*d.* (the record price); October declined to 8*s.* 10*d.*, and back to 9*s.* 1*d.*, since which time there has been a gradual decline in values, closing in December at 7*s.* 6¾*d.*

London.

WM. JAS. & HY. THOMPSON report [January 7]:

Pará.—Since our last, the leading feature in the Pará market has been the large and continuous buying in Brazil for American account at steadily advancing rates. This has left the European market still rather short for the whole of January, and European manufacturers who have been waiting for a decline have now been compelled to come into the market with the result of further strengthening the position. This situation appears

British Crude Rubber Imports.

OFFICIAL statistics for calendar years, stated in pounds:

YEAR.	Imports.	Exports.	Net Imports.
1898	54,833,072	33,023,536	21,809,536
1899	50,360,912	34,284,320	16,076,592
1900	57,593,312	32,864,832	24,728,480
1901	52,245,088	32,904,704	19,340,384
1902	46,970,000	32,676,112	14,293,888
1903	54,443,760	37,658,768	16,784,992
1904	55,555,584	33,415,536	22,140,048
1905	66,464,944	37,464,112	29,000,832
1906	67,992,624	36,988,336	31,004,288
1907	74,736,928	39,090,912	35,646,016
1908	64,407,392	40,153,792	24,253,600
1909	78,406,944	44,567,488	33,839,456

GUTTA-PERCHA.

YEAR.	Imports.	Exports.	Net Imports.
1898	7,082,656	1,151,136	5,931,520
1899	9,239,664	840,224	8,399,440
1900	14,118,608	1,709,792	12,408,816
1901	9,905,056	1,224,832	8,680,224
1902	9,395,568	1,190,784	8,204,784
1903	5,198,032	741,664	4,456,368
1904	3,056,256	890,624	2,165,632
1905	5,088,608	1,020,880	4,067,728
1906	5,966,352	973,952	4,992,400
1907	6,516,048	1,268,624	5,247,424
1908	3,575,936	521,920	3,054,016
1909	5,064,864	680,736	4,384,128

New York.

SUMMARY OF PRICES FOR 1909.

	UPRIVER.		ISLAND.		CAMETA.
	Fine.	Coarse.	Fine.	Coarse.	Coarse.
January	120@122	90@ 92	113@116	55@59	62@64
February	120@126	91@ 96	115@120	57@60	62@65
March	122@126	93@ 97	118@121	55@61	63@67
April	121@126	92@ 96	118@123	56@59	63@69
May	126@135	96@ 98	123@131	59@67	69@78
June	135@151	98@105	131@142	67@70	78@82
July	150@195	105@120	141@184	70@75	80@92
August	179@195	110@120	165@184	62@75	80@92
September	190@215	112@132	172@202	65@82	83@96
October	202@215	120@132	183@202	72@82	83@96
November	193@203	117@121	172@184	69@72	80@84
December	175@193	111@121	164@172	69@72	79@82

AVERAGE PRICES.

1909	159¾	107	149¾	66¼	77
1908	93¼	67½	88¼	47½	52
1907	109¼	88	104½	61¾	65½
1906	124½	93½	121	70	72¼
1905	128½	93½	125½	72	74
1904	113¼	87¾	110	65½	65½

Rubber Receipts at Manaos.

DURING December and six months of the crop season, for three years (courtesy of Messrs. Scholz & Co.):

	December.			July-December.		
FROM.	1909.	1908.	1907.	1909.	1908.	1907.
Rio Purús-Acre.....*tons*	423	775	599	3,898	3,846	3,234
Rio Madeira	379	453	273	2,017	1,917	1,568
Rio Juruá	550	838	624	1,491	1,825	1,372
Rio Javary-Iquitos	265	536	490	1,779	1,763	1,944
Rio Solimões	244	158	217	709	667	828
Rio Negro	171	195	111	261	124	141
Total	2,032	2,865	2,314	11,155	10,142	9,087
Caucho	349	884	490	1,882	1,954	1,424
Total	2,331	3,749	2,804	12,037	12,096	10,511

Less Rubber From Bolivia.

THESE figures denote the quantity of rubber exported from Bolivia, by calendar years, in English pounds. In most cases they are official, being supplied to THE INDIA RUBBER WORLD direct:

1891	759,000	1897	3,683,275	1903	2,906,274
1892	799,480	1898	6,943,100	1904	3,456,481
1893	868,600	1899	4,708,000	1905	3,720,908
1894	1,391,500	1900	7,691,728	1906	1,929,608
1895	1,804,902	1901	7,623,138	1907	1,830,513
1896	2,509,566	1902	4,186,585	1908	1,818,187

Up to and including 1902 the figures embraced the production of the Acre territory, which since has been ceded to Brazil. Until that time the Acre yielded the greater part of the Bolivian rubber export. In 1901 the Acre was credited with 5,054,436 pounds and in 1902 with 1,757,510 pounds. For 1903 and the years following the figures relate to Bolivia with the Acre excluded. It will be seen that for this region the yearly output has been declining, though it is known that the Acre has greatly enlarged its output of late.

The World's Stocks.

VISIBLE SUPPLIES PARA RUBBER JANUARY 1.

[Reported by WILLIAM WRIGHT & Co., Liverpool.]

	1910.				
	Pará.	Caucho.	1909.	1908.	1907.
English stocks Pará, first hands	240	—	128	773	273
English stocks Pará, second hands	148	—	147	154	104
English stocks caucho	—	390	348	500	25
Pará stocks, first hands	30	—	210	240	10
Pará stocks, second hands	480	40	580	460	490
American stocks	100	50	385	270	190
Continental stocks	30	10	20	210	70
Afloat to Europe	700	60	450	880	530
Afloat to America	910	90	920	240	470
	2,638	640			
Total visible, including caucho	3,278		3,188	3,727	2,162

African Rubbers.

NEW YORK STOCKS (IN TONS).

December 1, 1908	179	July 1, 1909	268
January 1, 1909	156	August 1	130
February 1	157	September 1	123
March 1	200	October 1	67
April 1	178	November 1	134
May 1	268	December 1	134
June 1	156	January 1, 1910	228

Havre.

THE first monthly inscription of the year, on January 27, embraced about 92 tons of rubber, practically all from the French Congo.

CENTRAL ELECTRIC CO. (Chicago) have issued under date of December, 1909, a price list and discount sheet applying to their catalogue No. 26, on Electrical Supplies, among which wire insulated with Okonite figures prominently. [5⅞" × 8¼". 64 pages.]

WIRT & KNOX MANUFACTURING CO. (Philadelphia), have brought out a catalogue for 1910 of their Hose Carts, Reels and Racks, which cannot fail to interest dealers in and users of such articles. [5¾ in. x 3¼ in. 44 pages.]

IN connection with the large wheels, the tires have a direct relation to the matter of weight. The over-heavy automobile destroys tires in far greater proportion to its weight than does the car of moderately light weight. Michelin is authority for the statement that a 5 per cent. increase in car weight will produce a 15 per cent. increase in the tire wear and tear. This means that an excess of one-third in weight doubles the destruction of tires.—H. H. FRANKLIN, in *Carriage Monthly.*

AN improvement in rubber vacuum cups whereby a heavy beveled hand mirror can be attached to a window pane and remain for months with perfect safety is what makes the Vacu-Mirror a very valuable adjunct to the toilet. The rubber suction cup fits inside of the semipherical metal cap shown in the engraving. In applying, the rubber cup is compressed or dented with the thumbs through the openings in the metal cup. With the face of the cap against the window pane, the release of the thumbs forms a vacuum that will keep it there indefinitely. [Austin Safes Co., No. 18 Vesey street, New York.]

SEND for a free copy of the Index to Mr. Pearson's "Crude Rubber and Compounding Ingredients," at the office of this paper.

likely to prevail for the next few weeks. The bulk of the crop will be received in Brazil during the next three months, but as it is not on the whole expected to show any extraordinary increase, but only just enough to satisfy the increased consumption, we expect that the large arrivals will find a ready market and that prices—minor fluctuations excepted—will on the whole be maintained and possibly carried ultimately to a higher level than at present ruling.

Antwerp.

THE offerings at the first monthly auction of the year, on January 20, embraced about 295, of which again a goodly proportion was of plantation sorts—from Straits Settlements, Java and Sumatra. The remainder was mostly of good congo sorts. There were also upwards of 27 tons of Maniçoba rubber, at varying estimations. Offerings of Congo sorts for account of the American Congo Co. reached 4,895 kilograms. A heavy advance in prices realized was scored.

RUBBER ARRIVALS FROM THE CONGO.

JANUARY 10.—By the steamer *Albertville:*

Bunge & Co.	(Société Générale Africaine)	*kilos*	96,300	
Do	(Comité Special Katanga)		5,000	
Do	(Chemins de fer Grands Lacs)		800	
Do	(Société Anversoise)		1,150	
Do	(Société Abir)		11,750	
Do	(Comptoir Commercial Congolais)		14,700	
Do	(Cie. du Kasai)		81,700	
Cassart & Henrion			1,000	
Congo Trading Co.			350	212,750

DECEMBER 20.—By the steamer *Bruxellesville:*

Bunge & Co.	(Société Générale Africaine)	*kilos*	96,400	
Do	(Société Abir)		6,000	
Do	(Société Anversoise)		3,600	
Do	(Comptoir Commercial Congolais)		37,800	
Do	(Comité Special Katanga)		7,500	
Do	(Chemins de fer Grands Lacs)		9,400	
Société Coloniale Anversoise			16,100	
L. & W. Van de Velde	(Cie. du Kasai)		86,000	
Do			2,000	
Charles Dethier	(American Congo Co.)		5,100	
M. S. Cols			5,100	
Société Générale de Commerce	(Alimaienne)		1,500	272,250

RUBBER STATISTICS FOR DECEMBER.

DETAILS.	1909.	1908.	1907.	1906.	1905.
Stocks, Nov. 30..*kilos*	735,616	604,170	1,015,282	714,919	635,296
Arrivals in December..	315,997	520,182	219,544	636,460	474,175
Congo sorts	215,983	454,701	190,000	579,700	436,404
Other sorts	100,014	65,481	29,544	56,760	37,771
Aggregating	1,051,613	1,124,352	1,234,826	1,351,379	1,109,471
Sales in December....	510,101	528,617	227,932	693,195	374,284
Stocks, December 31..	541,512	595,735	1,006,894	658,184	735,187
Arrivals since Jan. 1..	4,685,958	5,035,344	5,054,473	5,772,062	5,713,728
Congo sorts	3,492,332	4,262,531	4,346,141	4,593,759	4,442,607
Other sorts	1,193,626	772,813	708,332	1,178,303	1,271,121
Sales since Jan. 1....	4,740,181	5,446,503	4,705,763	5,849,065	5,519,805

New York.

IN regard to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York), advises as follows: "There has been a fair demand for commercial paper this month, principally from out of town banks, and the ruling rates have been 5@5½ per cent. for the best rubber names, and 6 per cent. for those not so well known."

Rubber Exports From Manaos.

THE following figures have been compiled from tables supplied to THE INDIA RUBBER WORLD by Messrs. Sholz & Co. (indicating weights in kilograms):

	Fine.	Medium.	Coarse.	Caucho.	Total.
New York	5,386,167	1,148,979	1,736,992	1,980,799	10,252,937
Liverpool	2,885,032	593,976	698,735	2,193,583	6,371,326
Havre and Hamburg	1,638,244	149,961	239,965	761,016	2,789,186
Total	9,909,443	1,892,916	2,675,692	4,935,398	19,413,449

EXPORTERS OF RUBBER FROM MANAOS.

Dusendschön, Zarges & Co.	*kilos*	5,381,585
Adelbert H. Alden		3,836,214
Scholz & Co.		3,445,468
Gordon & Co.		3,161,621
Soc. An. "Armazens Andresen"		346,973
De Lagotellerie & Co.		189,841
Günzburger & Co.		160,473
B. A. Antunes & Co.		143,511
J. G. Araujo		137,581
E. Kingdom & Co.		104,040
Leite & Co.		45,356
Mesquita & Co.		34,131
Sundry shippers		199,014
Iquitos transit		2,227,641
Total		19,413,449

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weight in Pounds.]

DEC. 27.—By the steamer *Crispin,* from Manáos and Pará.

IMPORTERS	Fine.	Medium.	Coarse.	Caucho	Total.
A. T. Morse & Co.	380,300	37,500	131,700	70,900=	620,400
New York Commercial Co.	324,500	128,800	83,800	53,200=	590,300
Poel & Arnold	153,900	35,000	123,400	123,200=	435,500
General Rubber Co.	219,300	53,600	116,000	23,800=	412,700
Hagemeyer & Brunn	23,200	1,400	18,500	....=	43,100
C. P. dos Santos	21,400	1,500	2,000	....=	24,900
Henderson & Kohn	....	....	13,200	....=	13,200
G. Amsinck & Co.	700	....	3,300	4,400=	8,400
TOTAL	1,123,300	257,800	491,900	275,500=	2,148,500

JAN. 4.—By the steamer *Clement,* from Manáos and Pará:

Poel & Arnold	406,500	72,700	173,700	15,600=	668,500
General Rubber Co.	240,000	59,700	147,700	34,900=	482,000
A. T. Morse & Co.	250,400	60,700	120,800	4,200=	436,100
New York Commercial Co.	122,300	24,500	25,600	75,500=	247,900
Henderson & Kohen	34,300	....	72,000	....=	106,300
Hagemeyer & Brunn	15,300	....	10,500	....=	25,800
C. P. dos Santos	15,000	1,400	7,900	....=	24,300
G. Amsinck & Co.	2,200	....	5,300	....=	7,500
TOTAL	1,086,000	219,000	563,200	130,200=	1,998,400

JAN. 14.—By the steamer *Dominic,* from Manáos and Pará:

Poel & Arnold	125,300	49,300	111,100	12,500=	298,200
General Rubber Co.	112,100	21,300	32,500	1,800=	167,700
New York Commercial Co.	62,700	8,600	41,200	43,500=	156,000
A. T. Morse & Co.	43,500	3,900	58,100	....=	105,500
C. P. dos Santos	72,100	6,100	20,500	....=	98,700
Hagemeyer & Brunn	12,500	4,600	32,400	....=	49,500
Edmund Reeks & Co.	3,600	1,400	2,600	....=	7,600
Henderson & Kohen	3,600	....	4,600	....=	8,200
Crossman & Sicklen	1,700	....	6,100	....=	7,800
William E. Peck & Co.	300	....	2,600	....=	2,900
TOTAL	437,400	95,200	311,700	57,800=	902,100

PARA RUBBER VIA EUROPE.

		POUNDS.
DEC. 24.—By the *St. Paul*=London:		
Poel & Arnold (Coarse)		8,000
DEC. 27.—By the *Laurentic*=Liverpool:		
New York Com. Co. (Fine)	70,000	
Robinson & Co. (Fine)	15,000	
New York Com. Co. (Caucho)	100,000	
Robinson & Co. (Coarse)	11,500	196,500
JAN. 3.—By the *Pennsylvania*=Hamburg:		
New York Com. Co. (Fine)	9,000	
New York Com. Co. (Coarse)	8,000	
General Rubber Co. (Coarse)	7,000	24,000
JAN. 3.—By the *Umbria*=Liverpool:		
Robinson & Co. (Fine)	18,000	
New York Com. Co. (Caucho)	56,000	
Robinson Co. (Coarse)	11,000	85,000
JAN. 6.—By the *Bohemian*=Liverpool:		
Poel & Arnold (Coarse)		45,000
JAN. 8.—By the *Waldersee*=Hamburg:		
Poel & Arnold (Coarse)	20,000	
W. L. Gough Co. (Fine)	5,000	25,000
JAN. 10.—By the *Minnehaha*=London:		
General Rubber Co. (Coarse)		22,000
JAN. 10.—By the *Carmania*=Liverpool:		
New York Com. Co. (Fine)	56,000	
Raw Products Co. Coarse)	9,000	65,000
JAN. 15.—By the *Lusitania*=Liverpool:		
New York Commercial Co. (Fine)		17,000
JAN. 17.—By the *Philadelphia*=Havre:		
Poel & Arnold (Coarse)		22,500
JAN. 18.—By the *Baltic*=Liverpool:		
New York Com. Co. (Fine)	63,000	
Livesey & Co. (Coarse)	33,500	
General Rubber Co. (Fine)	56,000	152,500
JAN. 20.—By the *Bluecher*=Hamburg:		
Poel & Arnold (Coarse)		11,000

OTHER NEW YORK ARRIVALS.

CENTRALS.

[*This sign, in connection with imports of Centrals, denotes **Guayule rubber.***]

DEC. 24.—By the *Alleghany*=Colombia:		
Cabello & Blancho	4,000	
R. del Castillo	2,500	
Anthold Held	2,500	
J. A. Pauli & Co.	1,000	
West Coast Rubber Co.	2,000	
Schobs & Marturet	1,000	
Isaac Brandon & Bros.	1,500	14,500
DEC. 24.—By the *Merido*=Mexico:		
Harburger & Stack	3,500	
H. Marquardt & Co.	2,000	
E. Stuger & Co.	1,500	
Isaac Kubie & Co.	1,500	
General Export Co.	1,000	
Graham, Hinkley & Co.	1,000	10,500
DEC. 27.—By the *Hugin*=Tampico:		
Ed. Maurer	*95,000	
New York Commercial Co.	*67,000	
Poel & Arnold	*30,000	
Rosing Bros. Co.	*7,000	*199,000

DEC. 27.—By the *Laurentic*=Liverpool:

New York Commercial Co...	9,000	
Robinson & Co.....	11,000	20,000

DEC. 28.—By the *Panama*=Colon:

G. Amsinck & Co.....	14,000	
Dumarest Bros. & Co.....	5,500	
Piza Nephews & Co.....	5,500	
J. Sambrada & Co.....	4,500	
A. Rosenthal & Sons.....	4,000	
Mecke & Co.....	3,500	
Jose Julia & Co.....	1,500	
America Trading Co.....	1,500	
Meyer Hecht	1,000	
Wessels Kulenkampff & Co...	1,000	41,500

DEC. 29.—By *El Valle*=Galveston:

Continental-Mexican Rub. Co.	*200,000	
Chas. T. Wilson Co.....	14,000	214,000

DEC. 29.—By the *Joachem*=Colon:

G. Amsinck & Co.....	4,000	
A. Rosenthal & Sons.....	4,000	
New York Commercial Co...	4,000	
Pablo Calvet & Co.....	2,500	
A. M. Capen's Sons.....	2,000	
Roldan & Van Sickle.....	1,000	17,500

DEC. 31.—By *El Cid*=Galveston:

Continental-Mexican Rubber Co.....		*30,000

JAN. 3.—By the *Alliance*=Colon:

Isaac Brandon & Bros.....	12,000	
G. Amsinck & Co.....	5,000	
Piza, Nephews & Co.....	3,000	
New York Commercial Co....	3,000	
L. Johnson & Co.....	2,000	
Fidanque Bros. & Co.....	1,000	26,000

JAN. 3.—By the *Sigismund*=Columbia:

J. H. Rossbach & Bros.....	7,000	
Maitland, Cappell Co.....	5,500	
Lionel Hagenaer's & Co.....	2,000	
G. Amsinck & Co.....	1,500	16.000

JAN. 3.—By the *Denver*=Galveston:

Poel & Arnold.....		*30,000

JAN. 3.—By the *Umbria*=Liverpool:

New York Commercial Co.....		15,000

JAN. 4.—By *El Alba*=Galveston:

Contintental-Mexican Rubber Co.....		*55,000

JAN. 4.—By the *Protens*=New Orleans:

Manhattan Rubber Mfg. Co.	2,500	
A. T. Morse & Co.....	4,000	
G. Amsinck & Co.....	1,500	
A. Rosenthal & Sons.....	1,500	9,500

JAN. 4.—By the *Matanzas*=Tampico:

Ed. Maurer	*210,000	
New York Commercial Co...	*120,000	
Poel & Arnold.....	*35,000	*365,000

JAN. 5.—By the *Kroonland*=Antwerp:

Ed. Maurer	*45,000	
Poel & Arnold.....	*34,000	*79,000

JAN. 5.—By *El Norte*=Galveston:

Continental-Mexican Rubber Co.....		*110,000

JAN. 6.—By the *Thames*=Colombia:

G. Amsinck & Co.....	3,500	
Suzarte & Whitney.....	2,500	
Gravenhorst & Co.....	1,000	
Roldan & Van Sickle.....	1,000	
Maitland, Coppell & Co.....	1,000	9,000

JAN. 6.—By the *Hawaii*=Mexico.

George A. Alden & Co.....		4,500

JAN. 7.—By the *Mexico*=Troutera:

Harburger & Stack.....	6,500	
E. U. Lebbals Co.....	2,500	
H. Marquardt Co.....	2,500	
E. Stuger & Co.....	1,500	
Isaac Kubie & Co.....	1,500	14,500

JAN. 8.—By the *Colon*=Colon:

Piza, Nephews & Co.....	6,500	
G. Amsinck & Co.....	6,500	
A. Rosenthal & Sons.....	2,000	15,000

JAN. 10.—By the *Attai*=Colombia.

Roldan & Van Sickle.....	2,500	
A. Held	2,500	
R. de Castella.....	1,500	
Cabello & Blancho.....	1,000	
De Lima Cortissoz & Co.....	1,000	8,500

JAN. 10.—By *El Dia*=Galveston:

Continental-Mexican Rubber Co.....		*80,000

JAN. 11.—By the *San Paulo*=Pernambuco:

A. D. Hitch & Co.....		11,000

JAN. 12.—By the *Yumuri*=Tampico:

Ed. Maurer	*125,000	
New York Commercial Co....	*34,000	*159,000

JAN. 13.—By the *Prins August*=Colon:

A. Santos & Co.....	6,000	
G. Amsinck & Co.....	3,500	
Suzarte & Whitney.....	1,500	
Isaac Brandon & Bros.....	1,000	12,000

JAN. 13.—By *El Rio*=Galveston:

Continental-Mexican Rub. Co.	*110,000	
For Canada	*5,500	*115,500

JAN. 13.—By the *Cadour*=Bahia:

Poel & Arnold.....	38,000	
A. Hirsch & Co.....	5,000	
J. Rossbach & Bros.....	5,000	48,000

JAN. 13.—By the *Antilles*=New Orleans:

A. N. Rothols.....	2,000	
A. T. Morse & Co.....	3,500	
Manhattan Rubber Co.....	1,500	
Robinson & Co.....	1,500	
Eggers & Heinlein.....	1,500	10,000

JAN. 15.—By the *Samland*=Antwerp:

Poel & Arnold.....		*22,000

JAN. 15.—By *El Monte*=Galveston:

Charles T. Wilson Co.....		*15,000

JAN. 17.—By the *Advance*=Colon:

G. Amsinck & Co.....	12,500	
L. Johnson & Co.....	11,500	
Henry Mann & Co.....	8,000	
Isaac Brandon & Bros.....	7,500	
Piza, Nephews & Co.....	7,000	
Dumarest Bros. & Co.....	5,000	
J. Sambrada & Co.....	4,500	
New York Commercial Co....	4,000	
A. Rosenthal & Sons.....	4,000	
Wessels Kulenkampff & Co...	2,500	
America Trading Co.....	2,000	
Roldan & Van Sickle.....	1,500	
Mecke & Co	1,500	
Meyer & Hecht.....	1,000	
Tropical Trade Co.....	1,000	
De Lima Cortissoy & Co.....	1,000	74,500

JAN. 17.—By the *Prins Eitel*=Colombia:

Lionel Hagmaers & Co.....	5,000	
Maitland, Coppell Co.....	3,500	
Cabello & Blancho.....	1,500	
Kunhardt & Co.....	1,000	11,000

JAN. 17.—By the *Monterey*=Mexico:

Harburger & Stack.....	14,000	
H. Marquardt & Co.....	5,500	
Isaac Kubie & Co.....	2,000	
E. Stuger & Co.....	1,500	
General Export Co.....	1,000	
E. W. Libbals & Co.....	1,000	
W. L. Wadleigh.....	1,000	
George A. Alden & Co.....	1,000	27,000

JAN. 17.—By the *Pretoria*=Hamburg:

Rubber Trading Co.....		11,500

JAN. 17.—By the *Lapland*=Antwerp:

Poel & Arnold.....		*15,000

JAN. 17.—By *El Sud*=Galveston:

Continental-Mexican Rubber Co.....		*55,000

JAN. 19.—By the *Sarnia*=Honduras:

A. Rosenthal & Sons.....	2,500	
Pablo Calvert & Co.....	2,000	
Isaac Brandon & Bros.....	1,000	5,500

JAN. 19.—By the *Baltic*=Liverpool:

Rubber Trading Co.....		11,000

JAN. 19.—By the *Clyde*=Colombia:

Maitland, Coppell & Co.....	4,000	
A. M. Capen's Sons.....	2,000	
G. Amsinck & Co.....	2,000	
Kunhardt & Co.....	2,000	
Gravenhorst & Co.....	1,000	
Isaac Brandon & Bros.....	1,000	12,000

JAN. 20.—By *El Dorado*=Galveston:

Cont.-Mexican Rubber Co...	*55,000	
Chas. T. Wilson & Co.....	*22,000	*77,000

JAN. 20 —By the *Tennyson*=Bahia:

A. Hirsch & Co.....	25,000	
New York Commercial Co...	14,000	
J. H. Rossbach & Bros.....	3,500	42,500

JAN. 21.—By the *Manzanillo*=Tampico:

Ed. Maurer	*75,000	
New York Commercial Co...	*70,000	
Cont.-Mexican Rubber Co...	*55,000	
Poel & Arnold	*30,000	
Schroeder & Co.....	*9,000	*239,000

JAN. 22.—By the *Merida*=Vera Cruz:

H. Marquardt & Co.....	2,500	
Mexican Products Co.....	1,000	3,500

JAN. 21.—By the *Panama*=Colon:

Isaac Brandon & Bros.....	17,000	
G. Amsinck & Co.....	13,000	
J. Sambrada & Co.....	7,000	
L. Johnson & Co.....	5,000	
Henry Mann & Co.....	2,500	
Dumarest Bros. & Co.....	2,000	
Andean Trading Co.....	1,500	
Suzarte & Whitney.....	1,500	
De Lima, Cortissoz & Co....	1,500	
New York Commercial Co...	1,500	
Fidanque Bros. & Co.....	1,500	
Roldan & Van Sickle.....	1,000	
Jose Julia & Co.....	1,000	
Meyer Hecht	1,000	57,000

JAN. 22.—By *El-Valle*=Galveston:

Con.-Mexican Rubber So.....		*55,000

AFRICAN.

		POUNDS.
DEC. 23.—By the *Teutonic*=London:		
Livesey & Co.....		11,500
DEC. 27.—By the *Touraine*=Havre:		
General Rubber Co.....		22,500
DEC. 27.—By the *Laurentic*=Liverpool:		
George A. Alden & Co.....	45,000	
Poel & Arnold.....	11,000	
H. A. Gould Co.....	5,500	61,500
JAN. 3.—By the *Pensylvana*=Hamburg:		
A. T. Morse & Co.....	25,000	
Rubber Trading Co.....	7,000	
W. L. Gough Co.....	6,500	
George A. Alden & Co.....	6,500	45,000
JAN. 3.—By the *Umbria*=Liverpool:		
A. T. Morse & Co.....	31,000	
Livesey & Co.....	20,000	51,000
JAN. 4.—By the *Bretagne*=Havre:		
Poel & Arnold.....	45,000	
C. P. dos Santos.....	2,000	47,000
JAN. 5.—By the *Kurdistan*=Lisbon:		
General Rubber Co.....		110,000
JAN. 5.—By the *Kroonland*=Antwerp:		
Poel & Arnold	100,000	
A. T. Morse & Co.....	28,000	
Rubber Trading Co.....	30,000	
H. A. Gould Co.....	11,500	169,500
JAN. 6.—By the *Bohemian*=Liverpool:		
General Rubber Co.....	45,000	
Poel & Arnold	5,500	50,500
JAN. 7.—By the *Adriatic*=London:		
Poel & Arnold.....		18,000
JAN. 8.—By the *Waldersee*=Hamburg:		
Poel & Arnold.....	34,000	
A. T. Morse & Co.....	13,500	
W. L. Gough Co.....	11,500	
Robinson & Co.....	7,000	66,000
JAN. 10.—By the *Arabic*=Liverpool:		
George A. Alden & Co.....		7,000
JAN. 10.—By the *Carmania*=Liverpool:		
Poel & Arnold.....	40,000	
A. T. Morse & Co.....	35,000	
Robinson & Co.....	11,500	
W. L. Gough Co.....	11,000	
H. A. Gould Co.....	9,000	
Rubber Trading Co.....	5,500	
George A. Alden & Co.....	5,500	117,500
JAN. 10.—By the *Winifredan*=Liverpool:		
General Rubber Co.....	44,500	
George A. Alden & Co.....	5,500	
Rubber Import Co.....	4,500	54,500
JAN. 14.—By the *Aspomont*=Lisbon:		
Poel & Arnold.....		33,500
JAN. 15.—By the *Lusitania*=Liverpool:		
A. T. Morse & Co.....		40,000
JAN. 15.—By the *Samland*=Antwerp:		
Poel & Arnold.....	20,000	
A. T. Morse & Co.....	17,000	
In Transit	10,000	47,000
JAN. 15.—By the *Hudson*=Bordeaux:		
General Rubber Co.....	67,000	
George A. Alden & Co.....	25,000	
A. T. Morse & Co.....	15,000	107,000
JAN. 17.—By the *McPherson*=Lisbon:		
General Rubber Co.....	22,500	
Robinson & Co.....	11,500	
A. T. Morse & Co.....	11,500	45,500
JAN. 17.—By the *Pretoria*=Hamburg:		
A. T. Morse & Co.....	57,000	
W. L. Gough Co.....	34,000	
Rubber Trading Co.....	18,000	
General Rubber Co.....	11,500	
Poel & Arnold.....	5,000	125,500
JAN. 18.—By the *Baltic*=Liverpool:		
George A. Alden & Co.....	22,500	
Robinson & Co.....	13,500	
Rubber Trading Co.....	15,000	
Raw Products Co.....	5,500	16,500
JAN. 19.—By the *Mexico*=Havre:		
Poel & Arnold.....	33,500	
Raw Products Co.....	3,500	37,000
JAN. 19.—By the *Bluecher*=Hamburg:		
George A. Alden & Co.....	13,500	
General Rubber Co.....	13,500	
A. T. Morse & Co.....	11,500	38,500
JAN. 22.—By the *Lincoln*=Hamburg:		
A. T. Morse & Co.....	55,000	
Poel & Arnold.....	22,500	
George A. Alden & Co.....	5,500	
W. L. Gough Co.....	8,000	
Rubber Trading Co.....	5,000	96,000

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EAST INDIAN.

[*Denotes plantation rubber.]

		Pounds.
DEC. 23.—By the *Teutonic*=London:		
A. T. Morse & Co.	*11,500	
DEC. 24.—By the *St. Paul*=London:		
A. T. Morse & Co.	*22,500	
Poel & Arnold	11,500	34,000
DEC. 31.—By the *New York*=London:		
Poel & Arnold	*45,000	
A. T. Morse & Co.	*22,500	
Robinson & Co.	*5,000	*72,500
JAN. 3.—By the *Pensylvana*=Hamburg:		
Poel & Arnold	11,500	
Geore A. Alden & Co.	9,000	20,500
JAN. 3.—By the *Barotse*=Colombo:		
A. T. Morse & Co.		*8,000
JAN. 4.—By the *Suraga*=Singapore:		
Heabler & Co.	20,000	
Poel & Arnold	11,000	
Geo. A. Alden & Co.	9,000	
O. Isenstein & Co.	10,000	50,000
JAN. 5.—By the *Kroonland*=Antwerp:		
Rubber Trading Co.		*5,000
JAN. 5.—By the *Trifels*=Colombo:		
A. T. Morse & Co.	*15,000	
New York Commercial Co.	*11,500	*26,500
JAN. 7.—By the *Adriatic*=London:		
Poel & Arnold	*65,000	
A. T. Morse & Co.	*35,000	
Poel & Arnold	9,000	109,000
JAN. 8.—By the *Albenga*=Singapore:		
George A. Alden & Co.		10,000
JAN. 10.—By the *Minnehaha*=London:		
General Rubber Co.		*25,000
JAN. 17.—By the *Philadelphia.*=London:		
Poel & Arnold	*70,000	
New York Commercial Co.	*10,000	*80,000
JAN. 18.—By the *Coulsdon*=Singapore:		
Heabler & Co.	20,000	
George A. Alden & Co.	8,000	
W. L. Gough Co.	8,000	36,000
JAN. 19.—By the *Foreric*=Colombo:		
A. T. Morse & Co.	*11,500	
Robert Crooks Co.	*3,500	*15,000
JAN. 19.—By the *Mesaba*=London:		
General Rubber Co.	*100,000	
A. T. Morse & Co.	*34,000	
Raw Products Co.	*2,500	*136,500
JAN. 20.—By the *Oceanic*=London:		
A. T. Morse & Co.	*15,000	
Poel & Arnold	*7,000	
Poel & Arnold	5,000	27,000
JAN. 22.—By the *Stolzenfels*=Colombo:		
A. T. Morse & Co.	*35,000	
New York Commercial Co.	*25,000	*60,000
GUTTA-JELUTONG.		
DEC. 27.—By the *Minnetonka*=London:		
Heabler & Co.		33,000
JAN. 4.—By the *Suruga*=Singapore:		
Heabler & Co.	200,000	
Poel & Arnold	125,000	
W. L. Gough Co.	80,000	405,000
JAN. 8.—By the *Albenga*=Singapore:		
W. L. Gough Co.		210,000
JAN. 18.—By the *Coulsdon*=Singapore:		
Heabler & Co.	500,000	
Poel & Arnold	200,000	
W. L. Gough Co.	150,000	
W. R. Russell & Co.	100,000	950,000
GUTTA-PERCHA.		
JAN. 3.—By the *Pennsylvania*=Hamburg:		
E. Oppenheim		13,500
JAN. 4.—By the *Suruga*=Singapore:		
Heabler & Co.	30,000	
O. Isenstein & Co.	11,000	
R. & J. Henderson	65,000	106,000
JAN. 8.—By the *Albanga*=Singapore:		
Heabler & Co.		10,000
JAN. 8.—By the *Waldersee*=Hamburg:		
E. Oppenheim		9,000
JAN. 18.—By the *Coulsdon*=Singapore:		
R. & J. Henderson		50,000
BALATA.		
JAN. 3.—By the *Korona*=Demerara:		
Ed. Maurer	7,000	
C. Tennant Sons & Co.	2,500	9,500
JAN. 14.—By the *Parima*=Demerara:		
Ed. Maurer	3,500	
Middleton & Co.	3,000	
J. A. Pauli & Co.	3,000	9,500

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—NOVEMBER.

Imports:	Pounds.	Value.
India-rubber	7,089,264	$7,914,681
Balata	39,491	19,590
Gutta-percha	21,871	12,448
Gutta-jelutong (Pontianak)	1,268,936	45,269
Total	8,419,562	$7,991,988
Exports:		
India-rubber	114,545	$67,850
Reclaimed rubber	27,895	3,711
Rubber scrap, imported	1,735,347	$150,879

PORT OF NEW YORK—DECEMBER.

Imports:	Pounds.	Value.
India-rubber	10,274,128	$11,337,091
Balata	18,114	8,685
Gutta-percha	30,544	11,893
Gutta-jelutong (Pontianak)	2,238,714	120,315
Total	12,561,500	$11,477,984
Exports:		
India-rubber	84,625	$51,320
Balata	24,008	13,179
Gutta-percha	20,172	1,815
Reclaimed rubber	77,518	10,124
Rubber scrap, imported	2,133,704	$167,077

BOSTON ARRIVALS.

DEC. 1.—By the *Michigan*=Liverpool:		
Poel & Arnold (African)		34,000
DEC. 9.—By the *Colombian*=London:		
Livesey & Co. (African)		11,000
DEC. 14.—By the *Sagamore*=Liverpool:		
Poel & Arnold (African)	5,500	
Poel & Arnold (Fine Pará)	22,500	28,000
DEC. 17.—By the *Schuylkill*=Singapore:		
Poel & Arnold (Jelutong)	250,000	
Heabler & Co. (Jelutong)	65,000	
W. L. Gough Co. (Jelutong)	55,000	
In Transit (Gutta-percha)	45,000	415,000
DEC. 27.—By the *Sylvania*=Liverpool:		
Poel & Arnold (African)	13,500	
Robinson & Co. (African)	13,500	27,000
DEC. 28.—By the *Sachem*=Liverpool:		
Poel & Arnold (African)		22,500
DEC. 30.—By the *Albenga*=Singapore:		
Geo. A. Alden & Co. (Jelutong)	680,000	
Heabler & Co. (Jelutong)	498,000	1,178,000

CONSUMPTION OF INDIA-RUBBER BY THE UNITED STATES AND CANADA (IN TONS).

[From the Annual Statistical Summary of ALBERT T. MORSE & Co., New York.]

DETAILS.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.
Imports to United States	14333	17671	18620	23095	20468	23208	21842	24760	27623	28635	29936	29433	29477	31129
Exports to Europe	500	250	150	300	450	680	430	490	274	357	1625	558	480	681
	13833	17421	18470	22795	20018	22528	21412	24270	27349	28278	28311	28875	28991	30448
Add stock on January 1	558	641	744	591	712	1198	1399	331	256	305	537	365	606	1553
	14391	18062	19214	23386	20730	23726	22811	24601	27605	28583	28848	29240	29603	32001
Less stock close of year	641	744	591	712	1198	1399	331	256	305	537	365	606	1553	*1332
Deliveries to manufacturers	13750	17318	18623	22674	19532	22327	22480	24345	27300	28046	28483	28634	28050	30669

Imports of guayule rubber, 8,674 tons.

*Includes *Cristin's* cargo, 958 tons.

PARA EXPORTS OF INDIA-RUBBER FOR 1909 (IN KILOGRAMS).

EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	TOTAL.
Gruner & Co.—*Pará*; Dusendschön, Zarges & Co.—*Manáos.*	2,458,307	436,891	1,625,177	614,254	5,134,629	2,687,658	557,668	625,595	1,588,713	5,459,634	10,594,263
Ad. H. Alden, Pará-Manáos	2,198,528	579,003	960,670	1,029,270	4,767,471	952,145	186,835	302,563	604,487	2,046,030	6,813,501
Scholz, Hartje & Co., Pará; Scholz & Co., Manáos	1,409,544	269,084	434,655	377,978	2,491,261	1,060,098	95,034	201,193	470,849	1,827,174	4,318,435
Gordon & Co., Pará-Manáos	1,523,548	327,078	859,803	213,907	2,924,336	658,630	149,677	155,877	389,219	1,353,403	4,277,739
E. Pinto Alves & Co., Pará	520,012	6,401	854,666	22,770	1,403,849	559,817	5,812	301,028	110,376	977,033	2,380,882
J. Marques, Pará	459,178	54,285	523,163	18,142	1,054,768	361,717	52,837	364,853	63,871	843,278	1,898,046
R. Suarez & Co., Pará-Manáos	23,488	2,912	4,898	.....	31,298	898,041	21,778	106,951	283,164	1,309,934	1,341,232
R. O. Ahlers & Co., Pará; Ahlers & Co., Manáos	85,678	.....	4,672	42,381	132,731	378,112	4,324	65,897	361,370	809,703	942,434
Pires Teixeira & Co., Pará	202,980	.....	231,000	.....	433,980	191,250	1,166	158,187	483	351,086	785,066
Alves Braga Rubber Est. & Trading C.°, Pará	.....	.....	.....	5,522	5,522	422,510	60,419	83,991	27,026	593,946	599,468
De Lagotellerie & Co., Pará-Manáos	231,530	32,455	106,486	67,236	437,707	57,251	13,040	14,855	2,643	89,789	525,496
Guilherme Augusto de Miranda Filho, Pará	87,282	17,037	47,822	36,516	188,657	129,027	22,116	23,839	19,472	194,454	383,111
S. A. Armazens Anderson, Manáos	.....	.....	.....	.....	.....	211,502	51,207	55,026	29,238	346,973	346,973
Mello & Co., Pará	35,061	6,495	29,166	28,338	99,060	87,148	18,473	25,017	21,930	152,568	251,628
Günzburger & Co., Manáos	6,938	1,482	9,662	7,866	25,948	4,936	1,277	1,848	126,729	134,790	160,738
Leite & Co., Pará-Manáos	28,197	2,036	1,949	10	32,192	74,368	13,001	9,539	20,963	117,871	150,063
B. A. Antunes & Co., Pará-Manáos	73,238	16,031	12,982	.....	102,251	35,520	2,560	2,580	600	41,260	143,511
J. G. Araujo, Manáos	3,560	1,822	4,060	.....	9,442	82,194	19,025	25,443	6,757	133,419	142,861
E. Kingdom & Co., Manáos	.....	.....	.....	104,040	104,040	673	95	224	357	1,349	105,389
Sundry shippers	48,024	9,568	52,035	7,397	117,024	96,767	16,223	56,173	78,785	247,948	364,972
Itacoatiara direct	1,888	4,055	3,877	1,867	11,687	72,021	9,837	53,098	13,218	148,174	159,861
Iquitos direct	42,741	675	17,427	78,284	139,127	811,228	69,817	316,849	1,429,513	2,627,407	2,766,534
Total	9,439,722	1,767,310	5,784,170	2,655,778	19,646,980	9,832,613	1,372,221	2,950,626	5,649,763	19,805,223	39,452,203

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Rubber Scrap Prices.

LATE New York quotations—prices paid by consumers for carload lots, per pound—show a slight decline since last month:

Old rubber boots and shoes—domestic	10⅝@10¾
Old rubber boots and shoes—foreign	9¼@ 9⅞
Pneumatic bicycle tires	7 @ 7⅛
Automobile tires	7½@ 7⅞
Solid rubber wagon and carriage tires	9⅛@ 9½
White trimmed rubber	10 @11
Heavy black rubber	6½@ 6¾
Air brake hose	5½@ 5¾
Garden hose	2⅞@ 3
Fire and large hose	3¾@ 4
Matting	1⅞@ 2

Plantation Rubber from the Far East, 1909.

IT is too early yet to present a complete statement of the extent of exports of cultivated rubber from Ceylon and Malaya for the calendar year 1909, but it may be of interest to give here the figures available for the latest dates in the year for which data are available.

From Ceylon, to December 20 ... *pounds*	1,332,055
From Singapore, to December 16 ...	2,348,271
From Penang, to November 30 ...	1,976,843
From Port Swettenham, to November 30 ...	2,507,913
Total (for incomplete year) ... *pounds*	8,165,082

Complete returns for former years have been:

	1905	1906	1907	1908
From Ceylon ... *pounds*	168,547	327,661	556,080	912,125
From Singapore ...	180,533	719,133	1,446,417	2,060,238
From Penang ...	48,267	98,636	642,668	1,611,197
From Port Swettenham ...	nil	nil	nil	nil
Total ...	397,347	1,145,430	2,645,165	4,583,560

LONDON AUCTION, JANUARY 4.

GOW, WILSON & STANTON, LIMITED, report:

Since the last sale the firm tone has continued, with a considerable volume of business in all grades. At the opening of the New Year the offerings came to a strong market, all descriptions being well competed for. Quotations generally showed a substantial improvement, in the case of the fine qualities to the extent of *2d.* to *4d.*; the medium and darker kinds of crepe being in some cases up to *1s.* higher. Vallambrosa smoked sheet realized *8s. 2¾d.* [=$2]; the same grade from Highlands *8s. 2½d.*; and from Bukit Rajah *8s. 0¾d.* per pound, several parcels of fine crepe bringing *7s. 8¾d.* [=$1.88] per pound. Offering mounted to about 146 tons, of which 18½ tons from Ceylon and the remainder from Malaya. Average price realized, *7s. 3⅝d.* [=$1.78]. Price of hard fine Pará, *7s. 7½d.* [=$1.85]. Range of quotations for plantation:

Sheet and Biscuits:		
Smoked sheet	7s. 10½d.@8s.	2¾d.
Good to fine sheet	7s. 5¾d.@7s.	7¼d.
Good to fine biscuits	7s. 5¼d.@7s.	7¼d.
Crepe:		
Very pale	7s. 6½d.@7s.	8¼d.
Medium and polish	7s. 1d. @7s.	6¼d.
Dark and brown	4s. 9d. @7s.	
Unwashed Scrap:		
Medium to fine	6s. @6s.	7d.
Dark and low	4s. @5s.	11¼d.

Lewis & Peat give the details of several lots of "rambong" (*Ficus*) rubber. Twenty packages of rambong crepe of the Sumatra mark realized *4s. 3½ d.* to *6s. 3½ d.* Rambong scrap sold at *4s.* and upward. Small lots from Borneo and Java were offered and sold.

JANUARY 18.—At to-day's aution, when about 105¾ tons of Ceylon and Straits plantation rubber was offered, there was good competition and everything was sold. Lewis & Peat, report: "Prices improved about *3d.* per pound during the sales, and we close with an advance of about 4 or 5 pence per pound for sheets and biscuits, 2½ and 3 pence for good crepe, 6 pence for brown crepes, and 3 pence for scrap. Smoked sheets fetched up to *8s. 7½d.* [= $2.09.8] and "Lanadron" blocks up to *8s. 9¼d.* [=$2.13.4] per pound for one lot." The price of fine brown Pará is *7s. 7½d.* [= $1.85.5] per pound.

Para.

R. O. AHLERS & Co. report [December 22]:

Another reaction set in since the middle of this month, and the existing stock found ready buyers at considerably increased prices. This movement seems to find further support from this side by very moderate entries from the sertao.

R. O. AHLERS & Co. report [January 11]:

Owing to reports of fairly heavy entries in Manáos, the market is somewhat irregular, showing, however, no real signs of weaknesses. Supply since our last report consist of 1605 tons including upriver and caucho. Receipts so far in January are 1,605 tons, against 2,300 tons in 1909, making the total entries since the 30th of June 17,962 tons this crop, against 18,850 in 1908-09 and 16,075 in 1907-08. Exports July—December, 8,825 tons to the United States and 7,230 tons to Europe.

Hamburg.

MR. WALTER KIRKERUP, for many years connected with Weber & Schaer, india-rubber merchants, Hamburg, has been granted powers of procuration for that firm, dating from January 1.

WILLIAM T. BAIRD, President ROBERT B BAIRD, Vice-President

RUBBER TRADING COMPANY

38 MURRAY STREET, NEW YORK,

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BOSTON OFFICE: 161 SUMMER STREET
TELEPHONE: 1983-2 OXFORD

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F. F. FOX, Representative. TELEPHONE: 3592-D, TRENTON.

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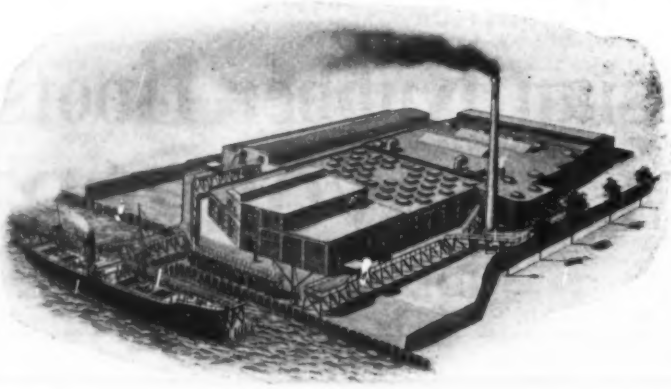

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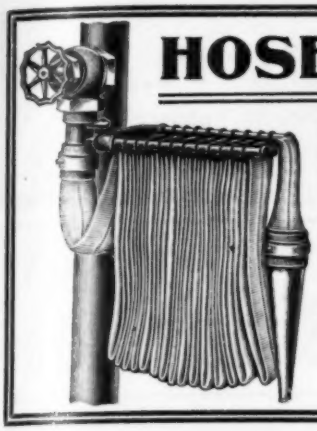

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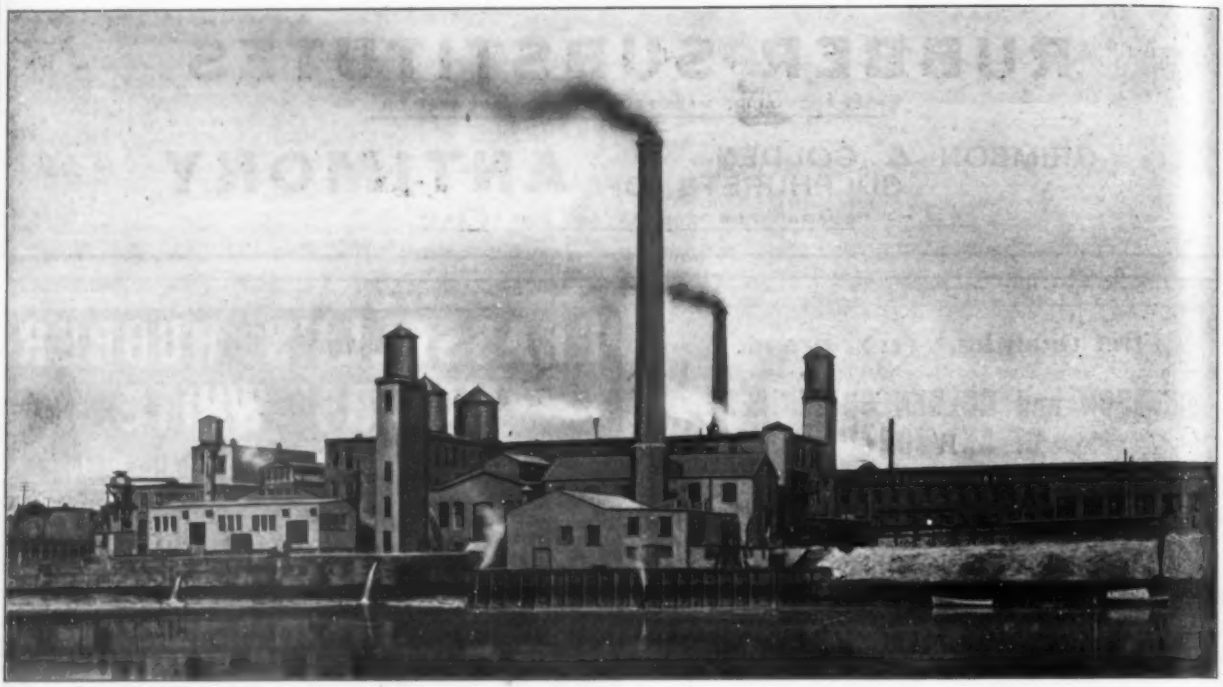

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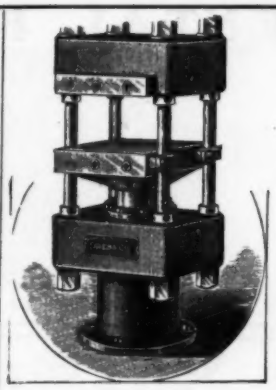

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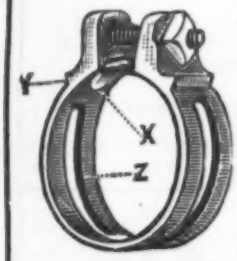

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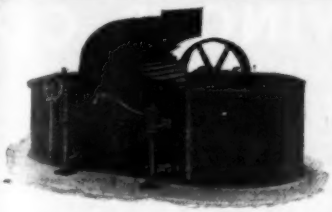

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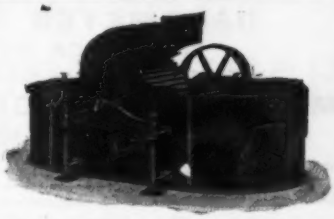

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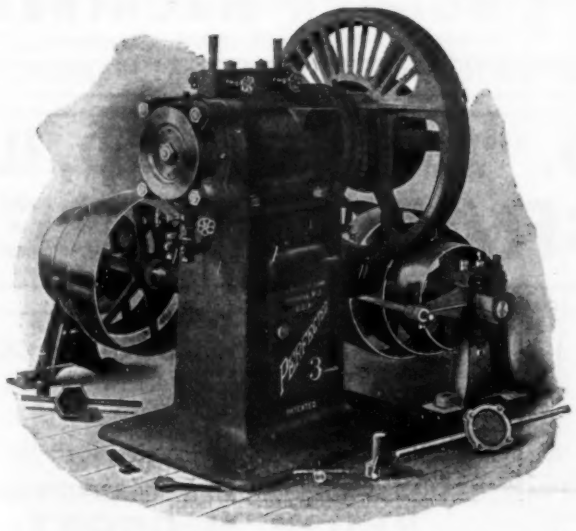

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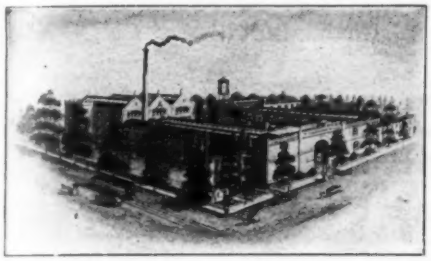

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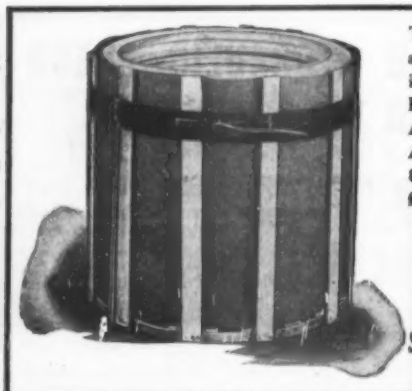

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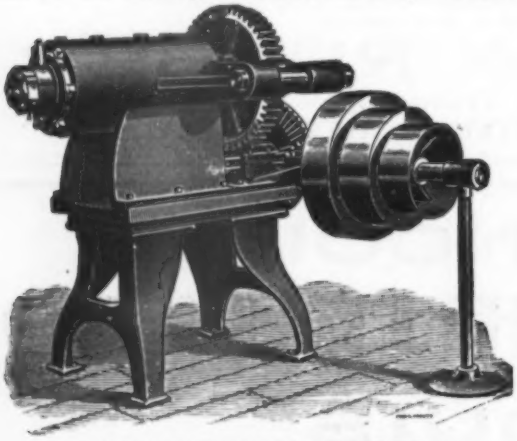

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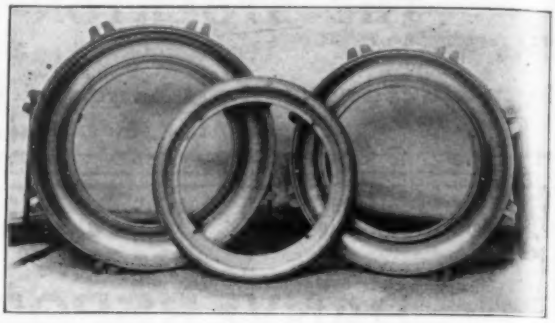

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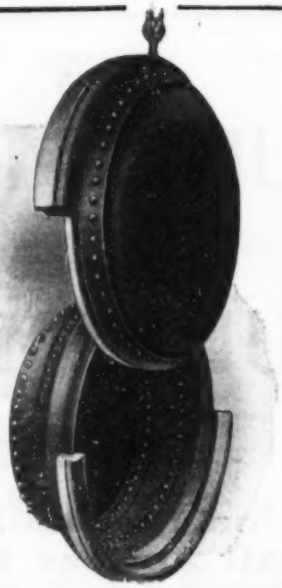

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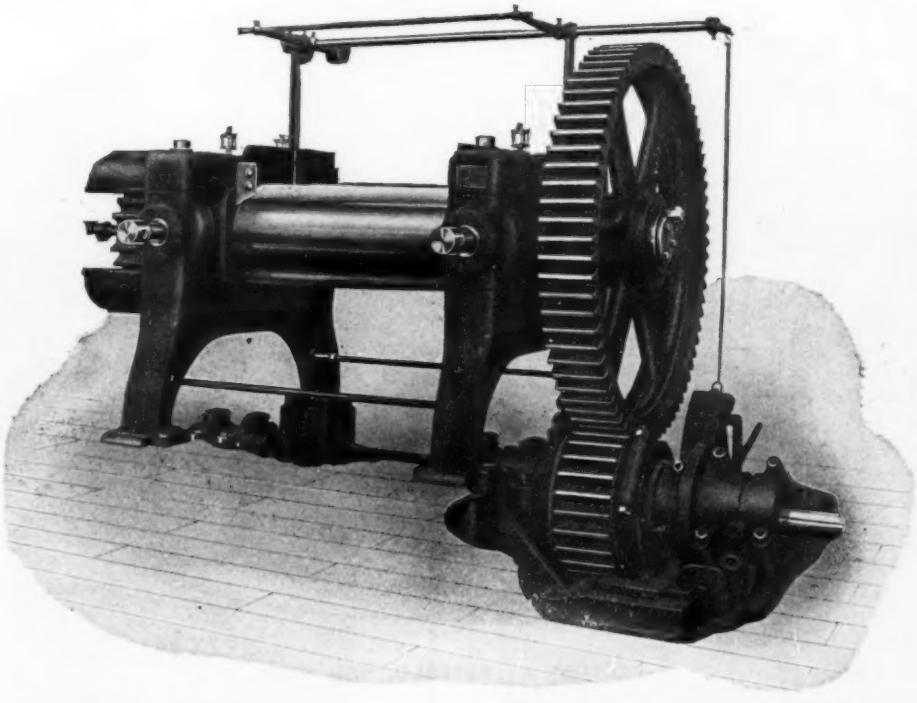

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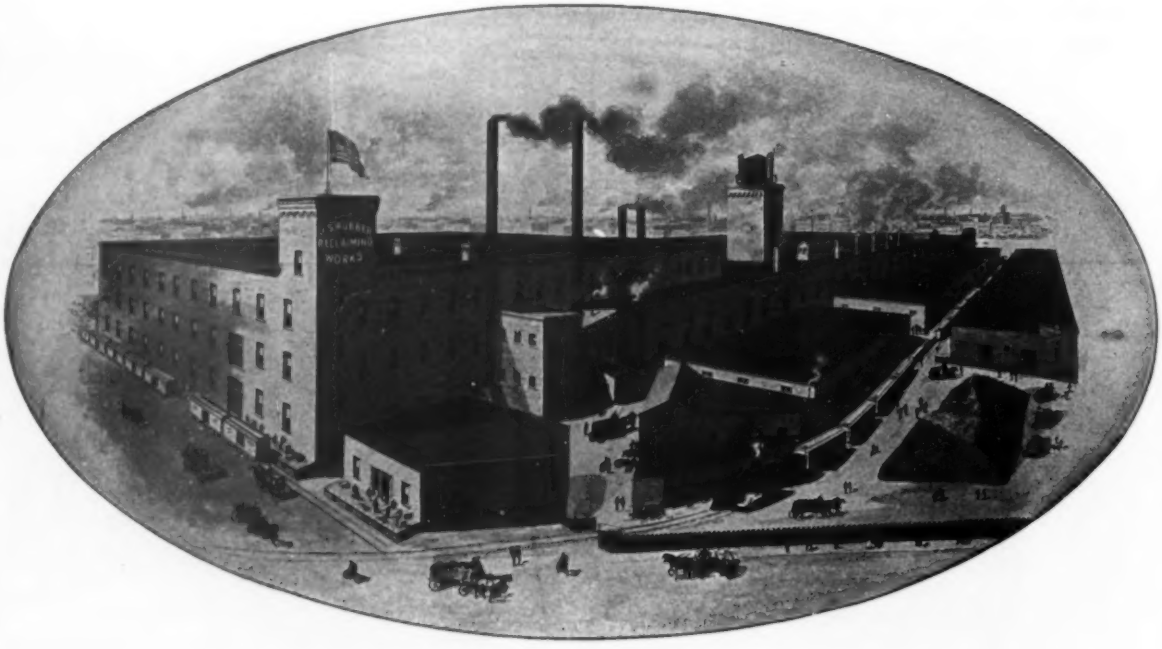

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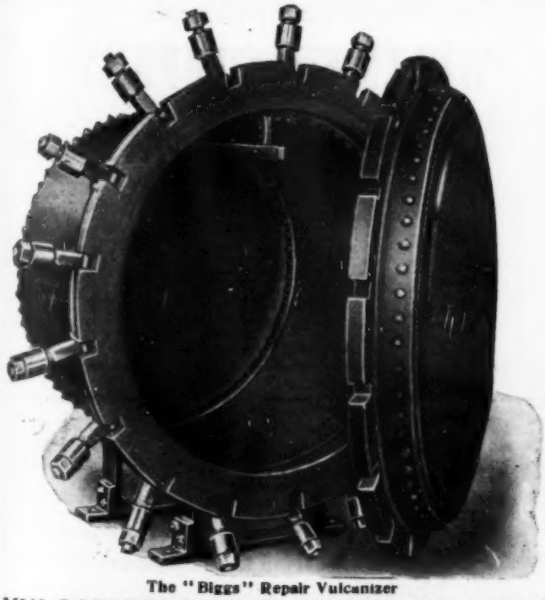

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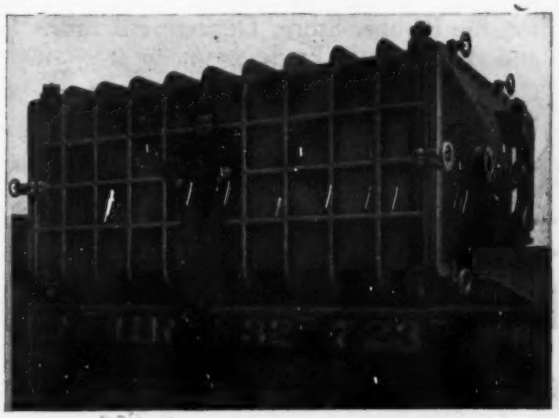

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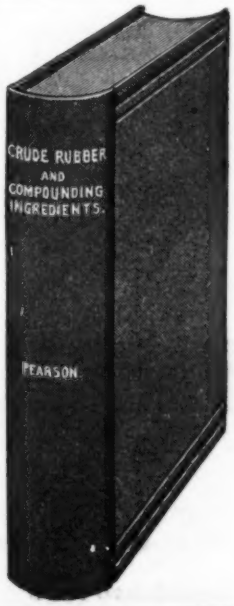
IN view of the general acquaintance of the trade in all countries with the above work it does not seem necessary to go into details here as to its scope and character. The ten years which have elapsed since its first appearance, however, have called for many additions and some changes, and these have been made with care, with a view to bringing the book up to date.

The India Rubber Publishing Company 395 BROADWAY NEW YORK



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Mention The India Rubber World when you write.

The Publishers' Page

A New Department of News.

INDIA-RUBBER in the news was never so prominent as today, and in the nature of things it seems likely to become even more prominent. There were hundreds of thousands of admissions at the two automobile shows held in New York during the first fortnight of January, and those who entered seemed to be no less interested in tires than in the automobiles themselves. And there was a good reason. The best automobile, if not equipped with good tires, is like an otherwise good chain with one weak link. Today the public, whether buyers of tires or not, has been educated to this point, and everybody knows now that good rubber is at the basis of good tires. Hence, everybody who owns an automobile, or who hopes to own one, is interested in reading about rubber—a fact which even the daily newspapers have not been slow to recognize.

* * *

Why The Public is Interested.

THE news gatherers are paying more respect to india-rubber since companies engaged in making rubber goods have come into existence on a basis of attracting capital from the public. And when the public subscribes to any industry it wants information regarding the condition of that industry. The number of industrial enterprises in which the public are interested increases with every year. Not that so many such enterprises are as yet listed on stock exchanges, but the number is growing which are of enough importance for outsiders to desire to buy shares in them, and this calls for publicity in the matter of earnings and dividends paid. In England and continental Europe this condition has existed for a good many years, and the same is coming to be true of the United States.

* * *

How Rubber Planting Figures.

RUBBER culture is another—and the latest—feature in published reports regarding this commodity. The leading English financial journal almost daily prints a large headline over a column on its first page on the market for rubber planting shares. Such shares are not yet traded in on this side of the Atlantic, but some American daily papers have considered it worth while to devote a good deal of space to rubber planting matters and the condition of the market abroad for plantation company shares. Now that the known yields of plantations are on record, and the conditions of the estates capable of being known at any time, details in this branch promise to become as general as reports regarding railways.

* * *

Improvement in Newspaper Reports.

THE intelligence with which the general newspapers deal with rubber and its applications is on a vastly higher plane than only a few years ago. This paper has quoted a leading New York daily, in an article prepared with evident care and painstaking, as stating that a certain product is "not rubber until after it has been vulcanized; before then it is only pará." The "melting" of rubber, as the chief operation in the factory, was long a stock phrase in daily newspaper reporting, and there were many others equally incorrect, from the standpoint of the practical rubber man. Today, however, the better daily papers may be found to contain articles on rubber at the basis of which is to be discovered an intelligent appreciation of the nature of the subject in hand.

* * *

"THE INDIA RUBBER WORLD'S" HOME.

[The building in the upper part of which we are housed fronts on Broadway—Nos. 395-399. It extends back for a long way on Walker street, west of Broadway.]

How About the Special Journals.

THE INDIA RUBBER WORLD welcomes the efforts of the general press to make the public more familiar with facts pertaining to the trade and industry. The effect, primarily, is to increase the demand for rubber goods, and particularly for those of the better class. Secondly, it tends to widen and render more stable the rubber industry itself, and this helps to benefit the public. And all this helps in widening the field of special papers, such as THE INDIA RUBBER WORLD, whose province is to supply accurate information for those who make a living from rubber and its applications. Already the publishers are able to record a much greater proportion of rubber goods and dealers in them. In many cases it is impossible to surmise in what way certain subscribers are concerned about rubber. We take it that the more the progress in the industry, and the greater the popular interest in rubber, the greater will be the demand for the special journals—and it may not be amiss to call the attention of advertisers to the increased value of such journals as mediums for the announcement of their wares.

* * *

"The India Rubber World's" Home.

IT seems worth while to reprint the illustrations which appeared in our last issue of the building in which THE INDIA RUBBER WORLD is housed because it will please us to have the friends of the paper become increasingly familiar with the appearance of the building, as an aid to their finding our location the more readily. The picture was given in our Anniversary Number because the edifice typifies the rebuilding of New York which, during the past twenty years, has been the most distinctive feature of the city. There were no "skyscrapers" in New York when THE INDIA RUBBER WORLD had its beginning. As the paper grew in years its habitat was changed from time to time, as happened to be made necessary by the progress of rebuilding. It does not seem probable today that another removal, from any such cause, will become necessary during the lifetime of the present management—but who can tell when our neighbors across the street may select to put up a seventy-five story building, and thereby shut out the light from the editorial windows?

BUYERS' DIRECTORY OF THE RUBBER TRADE.

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Valves.
Washers.

Mechanical Goods Generally.

Acme Rubber Mfg. Co., Trenton.
Atlantic Rubber Co., Hyde Park, Mass.
Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Bowers Rubber Co., San Francisco, Cal.
Canadian Rubber Co. of Montreal.
H. O. Canfield Co., Bridgeport, Conn.
Chicago Rubber Works, Chicago.
Cincinnati Rubber Mfg. Co., Cincinnati.
Cleveland Rubber Co., Cleveland, O.
Continental Caoutchouc & Gutta Percha Co., Hanover, Germany.
Continental Rubber Works, Erie, Pa.
The Dermatine Co., London.
Dunlop Tire & Rubber Goods Co., Toronto.
Empire Rubber Mfg. Co., Trenton, N. J.
Essex Rubber Co., Trenton, N. J.
Eureka Fire Hose Mfg. Co., New York.
Federal Rubber Co., Milwaukee, Wis.

Mechanical Goods—General.—Continued.

B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Gutta Percha & Rubber Mfg. Co., Toronto.
Home Rubber Co., Trenton, N. J.
The Indiana Rubber and Insulated Wire Co., Jonesboro, Ind.
Keystone R. M. Co., Erie, Pa.
Manhattan Rubber Mfg. Co., New York.
Massachusetts Chemical Co., Walpole, Mass.
Mattson Rubber Co., Lodi, N. J.
Mechanical Rubber Co., New York.
Morgan & Wright, Detroit, Mich.
National India-Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Pirelli & Co., Milan, Italy.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Jos. Stokes Rubber Co., Trenton, N. J.
Thermoid Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City.
Western Rubber Co., Goshen, Ind.

Air Brake Hose.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Acme Rubber Mfg. Co., Trenton.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.

Air Brake Hose—Continued.

Home Rubber Co., Trenton, N. J.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Belting (Canvas).

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Eureka Fire Hose Mfg. Co., New York.
The Gutta Percha & Rubber Mfg. Co. of Toronto, Ltd.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston-New York.

Billiard Cushions.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Cincinnati R. M. Co., Cincinnati, O.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
New York Belting & Packing Co., Ltd.
New York Rubber Co., New York.
Revere Rubber Co., Boston-New York.

Blankets—Printers'.

Peerless Rubber Mfg. Co., New York.
Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Hodgman Rubber Co., New York.

Blankets—Printers'.—Continued.

Gustave Kush, New York.
Revere Rubber Co., Boston-New York.
Voorhees Mfg. Co., Jersey City.

Brass Stair Nosing.

F. R. Howell Brass Works, Phila., Pa.

Brushes.

Boston Woven Hose & Rubber Co.
C. J. Bailey & Co., Boston.

Buffers.

Boston Belting Co., Boston-New York.
Canadian Rubber Co. of Montreal.
Cincinnati R. M. Co., Cincinnati, O.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co. of Toronto, Ltd.
Massachusetts Chemical Co., Walpole, Mass.
Mattson Rubber Co., Lodi, N. J.
National India Rubber Co., Bristol, R. I.
Revere Rubber Co., Boston-New York.
Voorhees Rub. Mfg. Co., Jersey City.

Card Cloths.

Canadian Rubber Co. of Montreal.
Mechanical Fabric Co., Providence, R. I.

Carriage Mats.

Continental Rubber Works, Erie, Pa.
Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co. of Toronto, Ltd.

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Home Rubber Co., Trenton, N. J.
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National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston—New York.
Voorhees Rubber Mfg. Co., Jersey City.

Cord (Pure Rubber).

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Davol Rubber Co., Providence, R. I.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Voorhees Rubber Mfg. Co., Jersey City.

Deckle Straps.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Mechanical Rubber Co., Chicago.
New York Belting & Packing Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.

Door Springs.

Hodgman Rubber Co., New York.

Dredging Sleeves.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati R. M. Co., Cincinnati, O.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
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Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Voorhees Rub. Mfg. Co., Jersey City.

Force Cups.

Continental R. Works, Erie, Pa.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Hodgman Rubber Co., New York.
Mattson Rubber Co., Lodi, N. J.
National India Rubber Co., Bristol, R. I.

Fruit Jar Rings.

Acme Rubber Mfg. Co., Trenton.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Empire Rubber Mfg. Co., Trenton, N. J.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Rubber Products Co., Barberton, O.
New York Belting & Packing Co., N. Y.

Fuller Balls.

Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Jenkins Bros., New York.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Rubber Products Co., Barberton, O.

Gage Glass Washers.

Boston Belting Co., Boston, Mass.
Canadian Rubber Co. of Montreal.
Cincinnati R. M. Co., Cincinnati, O.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Jenkins Bros., New York.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
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Revere Rubber Co., Boston, Mass.
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Gas-Bags (Rubber).

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
National India Rubber Co., Bristol, R. I.
Peerless Rubber Mfg. Co., New York.
Tyer Rubber Co., Andover, Mass.
Voorhees Rubber Mfg. Co., Jersey City.

Gasket Tubing.

Boston Belting Co., Boston—New York.
Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Jenkins Bros., New York.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
New Jersey Car Spring & Rubber Co.
Revere Rubber Co., Boston—New York.
Voorhees Rub. Mfg. Co., Jersey City.

Grain Drill Tubes.

Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.

Hat Bags.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
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Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Voorhees Rub. Mfg. Co., Jersey City.

Horse Shoe Pads.

Canadian Rubber Co. of Montreal.
Cincinnati R. M. Co., Cincinnati, O.
Continental Rubber Works, Erie, Pa.
Home Rubber Co., Trenton, N. J.
Keystone R. M. Co., Erie, Pa.
Manhattan Rubber Mfg. Co., New York.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Revere Rubber Co., Boston—New York.
Voorhees Rubber Mfg. Co., Jersey City.

Hose—Wire Wound.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
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Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Voorhees Rubber Mfg. Co., Jersey City.

Hose Core.

Alderfer Crate Co., Sharon Center, O.

Hose Pipes, Nozzles, Couplings and Fittings.

W. D. Allen Mfg. Co., Chicago.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Eureka Fire Hose Mfg. Co., New York.
F. R. Howell Brass Works, Phila., Pa.
Revere Rubber Co., Boston.
A. Schrader's Son, Inc., New York.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.

Hose Linings.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston—Pittsburgh.
Voorhees Rubber Mfg. Co., Jersey City.

Hose Racks and Reels.

W. D. Allen Mfg. Co., Chicago.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
New York Belting & Packing Co., N. Y.
Wirt & Knox Mfg. Co., Philadelphia.

Hose—Rubber Lined.

Cotton and Linen.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Gutta Percha & Rubber Mfg. Co., N. Y.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Fire Hose Mfg. Co., New York.
Fabric Fire Hose Co., New York.
B. F. Godorich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Gutta Percha & Rubber Mfg. Co. of Toronto.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Jos. Stokes Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City.

Hose—Submarine.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
A. Schrader's Son, Inc., New York.
Voorhees Rub. Mfg. Co., Jersey City.

Hose Bands, Straps & Menders.

W. D. Allen Mfg. Co., Chicago.
Boston Woven Hove & Rubber Co.
F. R. Howell Brass Works, Phila., Pa.
A. Schrader's Son, Inc., N. Y.
William Yerdon, Fort Plain, N. Y.

Lawn-Hose Supporters.

W. D. Allen Mfg. Co., Chicago.
C. J. Bailey & Co., Boston.

Lawn Sprinklers.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.

Mallets (Rubber).

Boston Belting Co., Boston—New York.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Keystone R. M. Co., Erie, Pa.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston—New York.

Mould Work.

(See Mechanical Rubber Goods.)

Atlantic R. Co., Hyde Park, Mass.
H. O. Canfield Co., Bridgeport, Ct.
Canton Rubber Co., Canton, O.
Cincinnati R. M. Co., Cincinnati, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
Essex Rubber Co., Trenton, N. J.
Faultless Rubber Co., Akron, O.
Hodgman Rubber Co., New York.
Massachusetts Chemical Co., Walpole, Mass.
Mattson Rubber Co., Lodi, N. J.
Morgan & Wright, Detroit, Mich.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Oil Well Supplies.

Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—Pittsburgh.
Voorhees Rubber Mfg. Co., Jersey City.

Packing.

(See Mechanical Rubber Goods.)

Jenkins Bros., New York.
Mattson Rubber Co., Lodi, N. J.

Paper Machine Rollers.

Boston Belting Co., Boston—New York.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Manhattan Rubber Mfg. Co., New York.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Voorhees Rubber Mfg. Co., Jersey City.

Plumbers' Supplies.

Canadian Rubber Co. of Montreal.
H. O. Canfield Co., Bridgeport, Ct.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
Republic Rubber Co., Youngstown, O.
Voorhees Rub. Mfg. Co., Jersey City.
Western Rubber Works, Goshen, Ind.

Pump Valves.

(See Mechanical Rubber Goods.)

Jenkins Bros., New York.
Mattson Rubber Co., Lodi, N. J.
Massachusetts Chemical Co., Walpole, Mass.

Rock Drill Couplings.

F. R. Howell Brass Works, Phila., Pa.

Rolls—Rubber Covered.

Acme Rubber Mfg. Co., Trenton, N. J.
Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Cincinnati R. M. Co., Cincinnati, O.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
Mechanical Rubber Co., Chicago.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Voorhees Rub. Mfg. Co., Jersey City.

Sewing Machine Rubbers.

Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.

Springs—Rubber.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Massachusetts Chemical Co., Walpole, Mass.
Mattson Rubber Co., Lodi, N. J.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Voorhees Rubber Mfg. Co., Jersey City.

Stair Treads.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co., of Montreal.
Cincinnati R. M. Co., Cincinnati, O.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Massachusetts Chemical Co., Walpole, Mass.

RUBBER BUYERS' DIRECTORY—Continued.

Stair Treads—Continued.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Thread.
B. F. Goodrich Co., Akron, O.
Mechanical Fabric Co., Providence, R. I.
Revere Rubber Co., Boston-New York.

Tiling.
American Hard Rubber Co., N. Y.
Canadian Rubber Co. of Montreal, Ltd.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Voorhees Rubber Mfg. Co., Jersey City.

Tubing.
(See Mechanical Rubber Goods.)
American Hard Rubber Co., New York.
Boston W. H. & R. Co., Boston.
Cincinnati R. M. Co., Cincinnati, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
Mattson Rubber Co., Lodi, N. J.
Plymouth Rubber Co., Stoughton, Mass.
Rubber Products Co., Barberton, O.
Star Rubber Co., Akron, O.
Tyer Rubber Co., Andover, Mass.
Voorhees Rub. Mfg. Co., Jersey City.

Valve Balls.
Boston Belting Co., Boston.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Jenkins Bros., New York.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
Mechanical Rubber Co., Chicago.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.

Valve Discs.
American Hard Rubber Co., New York.
Boston Belting Co., Boston-New York.
Cincinnati R. M. Co., Cincinnati, O.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Jenkins Bros., N. Y.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Western Rubber Works, Goshen, Ind.

Valves.
(See Mechanical Rubber Goods.)
Essex Rubber Co., Trenton, N. J.
Jenkins Bros. New York-Chicago.
Mattson Rubber Co., Lodi, N. J.

Vulcanite Emery Wheels.
Manhattan Rubber Mfg. Co., Passaic, N. J.
New York Belting & Packing Co., Ltd., New York.

Wringer Rolls.
Canadian Rubber Co., of Montreal.
Cincinnati R. M. Co., Cincinnati, O.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
New York Belting & Packing Co., N. Y.
Republic Rubber Co., Youngstown, O.

DRUGGISTS' AND STATIONERS' SUNDRIES.

Atomizers. **Nipples.**
Bandages. **Syringes.**
Bulbs. **Water Bottles.**
Druggists' Sundries, Generally.

American Hard Rubber Co., New York.
Atlantic R. Co., Hyde Park, Mass.
C. J. Bailey & Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Canton Rubber Co., Canton, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Luserne Rubber Co., Trenton, N. J.
Mass. Chemical Co., Walpole, Mass.
National India Rubber Co., Bristol, R. I.
Parker, Stearns & Co., N. Y.
Pirelli & Co., Milan, Italy.
Rubber Products Co., Barberton, O.
Seamless Rubber Co., New Haven, Ct.
Star Rubber Co., Akron, O.
Tyer Rubber Co., Andover, Mass.
Walpole Rubber Co., Granby, P. Q.
Walpole Rubber Works, Walpole, Mass.
Western Specialty Mfg. Co., N. Y.

Balls, Dolls and Toys.
New York Rubber Co., New York.

Combination Fountain Syringe and Hot Water Bottle Fixtures.
A. Schrader's Son, Inc., N. Y.

Combs.
American Hard Rubber Co., New York.

Elastic Bands.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York-Boston.
Tyer Rubber Co., Andover, Mass.

Electrician Gloves.
Star Rubber Co., Akron, O.

Erasive Rubbers.
Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.

Finger Cots.
Canton Rubber Co. Canton, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence.
Faultless Rubber Mfg. Co., Akron, O.
B. F. Goodrich Co., Akron, O.
The Rubber Products Co., Barberton, O.
Star Rubber Co., Akron, O.

Gloves.
Canadian Rubber Co. of Montreal.
Canton Rubber Co., Canton, O.
Davol Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
Rubber Products Co., Barberton, O.
Star Rubber Co., Akron, O.

Hard Rubber Goods.
American Hard Rubber Co., New York.
Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
H. O. Canfield Co., Bridgeport, Ct.
Davol Rubber Co., Providence, R. I.
Luserne Rubber Co., Trenton, N. J.
Stokes Rubber Co., Joseph, Trenton, N. J.
Tyer Rubber Co., Andover, Mass.

Hospital Sheetings.
Atlantic R. Co., Hyde Park, Mass.
Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Hot Water Bottle Stopples.
A. Schrader's Son, Inc., N. Y.

Ice Bags and Ice Caps.
Canton Rubber Co., Canton, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
The Rubber Products Co., Barberton, O.
Star Rubber Co., Akron, O.
Tyer Rubber Co., Andover, Mass.

Life Preservers.
Davol Rubber Co., Providence.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Shower Bath Sprinklers.
Davol Rubber Co., Providence.
A. Schrader's Son, Inc., New York.

Sponges (Rubber).
Faultless Rubber Co., Ashland, O.
N. Tire Rubber Sponge Co., Chicago.

Stationers' Sundries.
American Hard Rubber Co., New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York-Boston.
Seamless Rubber Co., New Haven, Ct.
Tyer Rubber Co., Andover, Mass.

Stopples (Metal).
A. Schrader's Son, Inc., N. Y.

Stopples (Rubber).
Continental R. Works, Erie, Pa.
Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
Hodgman Rubber Co., New York.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
Tyer Rubber Co., Andover, Mass.

Throat Bags.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
Tyer Rubber Co., Andover, Mass.

Tobacco Pouches.
Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
The Rubber Products Co., Barberton, O.
Tyer Rubber Co., Andover, Mass.

MACKINTOSHED AND SURFACE GOODS.

Air Goods (Rubber).
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
New York Rubber Co., New York.
National India Rubber Co., Providence.
Rubber Products Co., Barberton, O.
Tyer Rubber Co., Andover, Mass.

Air Mattresses.
Canadian Rubber Co. of Montreal.
Mechanical Fabric Co., Providence, R. I.
National India Rubber Co., Bristol, R. I.

Barbers' Bibs.
Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
Tyer Rubber Co., Andover, Mass.

Bathing Caps.
Atlantic R. Co., Hyde Park, Mass.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Rubber Products Co., Barberton, O.

Bellows Cloths.
Atlantic R. Co., Hyde Park, Mass.
Boston Rubber Co., Boston.
Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.

Calendering.
Plymouth Rubber Co., Stoughton, Mass.

Carriage Ducks and Drills.
Acme Rubber Mfg. Co., Trenton, N. J.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Gutta Percha & Rubber Mfg. Co., Toronto.
National India Rubber Co., Bristol, R. I.

Clothing.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Gutta Percha & Rubber Mfg. Co. of Toronto.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.
Pirelli & Co., Milan, Italy.

Cravenette.
Cravenette Co., Ltd.

Diving Apparatus.
A. Schrader's Son, Inc., New York.
Hodgman Rubber Co., New York.

Horse Covers.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R.I.

Leggings.
Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Mackintoshes.
(See Clothing.)

Proofing.
Canadian Rubber Co of Montreal.
Plymouth Rubber Co., Stoughton, Mass.

Rain Coats.
Cravenette Co., Ltd.

Rubber Coated Cloths
Mechanical Fabric Co., Providence R. I.

RUBBER FOOTWEAR.

Boots and Shoes.
American Rubber Co., Boston.
Boston Rubber Shoe Co., Boston.
Canadian Rubber Co. of Montreal.
L. Candee & Co., New Haven, Conn.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co. of Toronto.
Hood Rubber Co., Boston.
Lycoming Rubber Co., Williamsport, Pa.
Meyer Rubber Co., New York.
National India Rubber Co., Boston.
United States Rubber Co., New York.
Wales-Goodyear Rubber Co., Boston.
Woonsocket Rubber Co., Providence.

Heels and Soles.
Atlantic R. Co., Hyde Park, Mass.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Continental Caoutchouc & Gutta Percha Co., Hanover.
Essex Rubber Co., Trenton, N. J.
Foster Rubber Co., Boston.
The Gutta Percha & Rubber Mfg. Co. of Toronto, Ltd.
Massachusetts Chemical Co., Walpole, Mass.
Plymouth Rubber Co., Stoughton, Mass.
Western Rubber Works, Goshen, Ind.

Tennis Shoes.
American Rubber Co., Boston.
Boston Rubber Shoe Co., Boston.
The Gutta Percha & Rubber Mfg. Co. of Toronto, Ltd.
National India Rubber Co., Providence.
United States Rubber Co., New York.

Wading Pants.
Canadian Rubber Co. of Montreal.
Hodgman Rubber Co., New York.

DENTAL AND STAMP RUBBER.

Dental Gum.
American Hard Rubber Co., New York.
Cleveland Rubber Co., Cleveland, O.
Tyer Rubber Co., Andover, Mass.

Rubber Dam.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Tyer Rubber Co., Andover, Mass.

Stamp Gum.
B. F. Goodrich Co., Akron, O.
Mattson Rubber Co., Lodi, N. J.
Mechanical Rubber Co., Chicago, Ill.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.

ELECTRICAL.

Electrical Supplies.
American Hard Rubber Co., New York.
Joseph Stokes Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Boston.
Mattson Rubber Co., Lodi, N. J.
Tyer Rubber Co., Andover, Mass.

Friction Tape.
Acme Rubber Mfg. Co., Trenton, N. J.
Boston Belting Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Boston.
Mechanical Rubber Co., Chicago.
National India Rubber Co., Bristol, R. I.
Revere Rubber Co., Boston-New York.

Hard Rubber Goods.
American Hard Rubber Co., New York.
Canadian Rubber Co. of Montreal.
Luserne Rubber Co., Trenton, N. J.
Joseph Stokes Rubber Co., Trenton, N. J.

RUBBER BUYERS' DIRECTORY—Continued.

Insulating Compounds.

Canadian Rubber Co. of Montreal.
Gutta Percha & Rubber Mfg. Co., Toronto.
Massachusetts Chemical Co., Boston.

Insulated Wire and Cables.

Acme Rubber Mfg. Co., Trenton, N. J.
W. R. Brixey, New York.
The Indiana Rubber and Insulated Wire Co., Jonesboro, Ind.
National India Rubber Co., Providence, R. I.

Insulated Wire Waxes.

American Wax Co., Boston.

Splicing Compounds.

Boston W. H. & R. Co., Boston.
Home Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Walpole, Mass.

SPORTING GOODS.

Foot Balls.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Golf Balls.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co. of Toronto, Ltd.

Sporting Goods.

Canadian Rubber Co. of Montreal.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Tyer Rubber Co., Andover, Mass.

Striking Bags.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Rubber Products Co., Barberton, O.

Submarine Outfits.

Hodgman Rubber Co., New York.
A. Schrader's Sons, Inc., New York.

MISCELLANEOUS.

Boxes (Wood).

Henry H. Sheip & Co., Philadelphia.

Brass Fittings.

A. Schrader's Son, New York.

Cement (Rubber).

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Manhattan Rubber Mfg. Co., New York.
Massachusetts Chemical Co., Walpole, Mass.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.

Chemists.

Chute, H. O., New York.
Maywald, F. J., New York.
Stephen P. Sharples, Boston, Mass.

Consulting Engineers.

Akron Rubber Engineering Co., Akron, O.

Rubber Journals.

Gummi-Zeitung, Dresden, Germany.
L'Agriculture des Pays Chauds, France.

Rubber Tree Seeds.

J. P. William & Bros., Heneratgoda, Ceylon.

Tapping Tools.

G. Van den Kerckhove, Brussels, Belgium.

Valves for Air Goods.

A. Schrader's Son, Inc., New York.

MACHINERY AND SUPPLIES FOR RUBBER MILLS.

RUBBER MACHINERY.

Acid Tanks.

Birmingham Iron Foundry, Derby, Conn.

Band Cutting Machines.

A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Conn.

Belt Folding Machines.

Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Belt Slitters.

Cloth Dryers.

Gearing.

Shafting.

Wrapping Machines.

Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Belt Stretchers.

Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.
Hoggson & Pettis Mfg. Co., New Haven.

Boilers.

William R. Thropp, Trenton, N. J.
John E. Thropp & Sons Co., Trenton, N. J.

Braiders.

New England Butt Co., Providence, R. I.

Calenders.

Birmingham Iron Foundry, Derby, Conn.
David Bridge & Co., Castleton, Manchester, Eng.
Farrel Foundry & Mach. Co., Ansonia, Conn.
Textile-Finishing Machinery Co., Providence, R. I.

Castings.

A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Chucks (Lathe).

Hoggson & Pettis Mfg. Co., New Haven.

Churns.

American Tool & Machine Co., Boston.

Clutches.

Farrel Foundry & Mach. Co., Ansonia, Conn.

Crackers.

Birmingham Iron Foundry, Derby, Conn.

Devulcanizers.

Biggs Boiler Works Co., Akron, O.
Birmingham Iron Foundry, Derby, Conn.
Edred W. Clark, Hartford, Conn.
John E. Thropp & Sons Co., Trenton, N. J.
William R. Thropp, Trenton, N. J.

Dies.

Hoggson & Pettis Mfg. Co., New Haven.

Doubling Machines.

American Tool & Machine Co., Boston.

Drying Machines.

Buffalo Foundry & Machine Co., Buffalo, N. Y.
David Bridge & Co., Castleton, Manchester, Eng.
Joseph P. Devine, Buffalo, N. Y.
Birmingham Iron Foundry, Derby, Conn.
Textile-Finishing Machinery Co., Providence, R. I.

Embossing Calenders.

Textile-Finishing Machinery Co., Providence, R. I.

Engine Steam.

William R. Thropp, Trenton, N. J.
John E. Thropp & Sons Co., Trenton, N. J.

Engraving Rolls.

Hoggson & Pettis Mfg. Co., New Haven.

Grinders and Mixers.

Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.
John E. Thropp & Sons Co., Trenton, N. J.
William R. Thropp, Trenton, N. J.

Hangers.

Farrel Foundry & Mach. Co., Ansonia, Conn.

Hose Machines.

A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Conn.
New England Butt Co., Providence, R. I.

Hydraulic Accumulators.

Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.
John E. Thropp & Sons Co., Trenton, N. J.

Insulating Machinery.

John Royle & Sons, Paterson, N. J.

Lathes—Hard Rubber.

A. Adamson, Akron, O.

Lathes—Jar Ring.

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Birmingham Iron Foundry, Derby, Conn.
John E. Thropp & Sons Co., Trenton, N. J.
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Machinists' Tools.

Hoggson & Pettis Mfg. Co., New Haven.

Moulds.

A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Conn.
Continental Rubber Works, Erie, Pa.
Hoggson & Pettis Mfg. Co., New Haven.
John E. Thropp & Sons Co., Trenton, N. J.
Williams Foundry & Machine Co., Akron, O.

Pillow Blocks.

Farrel Foundry & Mach. Co., Ansonia, Conn.

Presses (for Rubber Work).

A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Conn.
Boomer & Boschert Press Co., Syracuse, N. Y.
Edred W. Clark, Hartford, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.
John E. Thropp & Sons Co., Trenton, N. J.
William R. Thropp, Trenton, N. J.
Williams Foundry & Machine Co., Akron, O.

Pumps.

Birmingham Iron Foundry, Derby, Conn.
Boomer & Boschert Press Co., Syracuse.
Farrel Foundry & Mach. Co., Ansonia, Conn.

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Hoggson & Pettis Mfg. Co., New Haven.

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Mason Regulator Co., Boston.

Rollers (Hand).

Hoggson & Pettis Mfg. Co., New Haven.

Rubber Covering Machines.

New England Butt Co., Providence, R. I.

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Turner, Vaughn & Taylor Co., Cuyahoga Falls, O.

Spreaders.

American Tool & Machine Co., Boston.
Birmingham Iron Foundry, Derby, Conn.
New England Butt Co., Providence, R. I.

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Jenkins Bros., New York.
Mason Regulator Co., Boston.

Steel Stamps.

Hoggson & Pettis Mfg. Co., New Haven.

Stichers (Hands).

Hoggson & Pettis Mfg. Co., New Haven.

Strip Covering Machines.

Strip Cutters.

New England Butt Co., Providence, R. I.

Tire Molds.

John E. Thropp & Sons Co., Trenton, N. J.
Williams Foundry & Machine Co., Akron, O.

Tubing Machines.

A. Adamson, Akron, O.
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John Royle & Sons, Paterson, N. J.
Williams Foundry & Machine Co., Akron, O.

Vacuum Drying Chambers.

Buffalo Foundry & Machine Co., Buffalo, N. Y.
Joseph P. Devine Co., Buffalo, N. Y.

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Birmingham Iron Foundry, Derby, Conn.

Vulcanizers.

Biggs Boiler Works Co., Akron, O.
Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.
John E. Thropp's Sons Co., Trenton, N. J.
William R. Thropp, Trenton, N. J.

Washers.

Birmingham Iron Foundry, Derby, Conn.
David Bridge & Co., Castleton, Manchester, Eng.
Farrel Foundry & Machine Co., Ansonia, Conn.
John E. Thropp & Sons Co., Trenton, N. J.
William R. Thropp, Trenton, N. J.
Turner, Vaughn & Taylor Co., Cuyahoga Falls, O.

Wire Insulating Machines.

New England Butt Co., Providence, R. I.
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W. C. Coleman Co., Boston.
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M. Norton & Co., Charlestown, Mass.

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Aluminum Flake.

Aluminum Flake Co., Akron, O.

Antimony, Sulphurets of.

Golden.

Actien-Ges. Georg Egestorff's Salzwerks Linden, Germany.
Atlas Chemical Co., Newtonville, Mass.

Golden and Crimson.

Joseph Cantor, New York.

Golden and Crimson.

Wm. H. Scheel, New York.

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Stamford (Conn.) Rubber Supply Co.
Typke & King, London, England.

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George A. Alden & Co., Boston.

Barytes.
Gabriel & Schall, New York.

Benzol.
Barrett Mfg. Co., Philadelphia.
Samuel Cabot, Boston.

Black Hypo.
Joseph Cantor, New York.
William H. Scheel, New York.
Typke & King, London, England.

Carbon Bisulphide.
George W. Speight, New York.

Chemicals.
George W. Speight, New York.
S. P. Wetherill Co., Philadelphia, Pa.

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George A. Alden & Co., Boston.
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Rubber Trading Co., New York-Boston.

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The Dermatine Co., London.

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Jos. Dixon Crucible Co., Jersey City.

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Continental Rubber Co.
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George A. Alden & Co., Boston.
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Rubber Trading Co., New York-Boston.

Hydro-Carbon Products.
Geo. A. Alden & Co., Boston.
American Wax Co., Boston.
William H. Scheel, New York.
Raven Mining Co., Chicago.

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Oxford-Tripoli Co., Ltd., N. Y.
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Raven Mining Co., Chicago.

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Lead—Sublimed White.
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Lithopone.
Gabriel & Schall, New York.

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Dauversport Rubber Co. Boston.
Eastern Rubber Co., New York.
New Jersey Rubber Co., Lambertville, N. J.
Pequanoc Rubber Co., Butler, N. J.
Philadelphia Rubber Works, Philadelphia.
Rickaby Rubber Mfg. Co., South Framingham, Mass.
Stockton Rubber Co., Stockton, N. J.
Jos. Stokes Rubber Co., Trenton, N. J.
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Rubber Trading Co., New York-Boston.
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Massachusetts Chemical Co., Walpole, Mass.

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B. Loewenthal & Co., New York and Chicago.
Philip McGrory, Trenton, N. J.
Meyer Bros., Philadelphia, Pa.
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M. Norton & Co., Charlestown, Mass.
Rosenthal, H. A., Trenton, N. J.
J. Schnurmann, London.
Schwab & Co., Philadelphia.
Trenton Scrap Rubber Supply Co., Trenton, N. J.
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American Wax Co., Boston.

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New Jersey Zinc Co., New York.

Zinc Substitute.
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National India Rubber Co., Bristol, R. I.

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